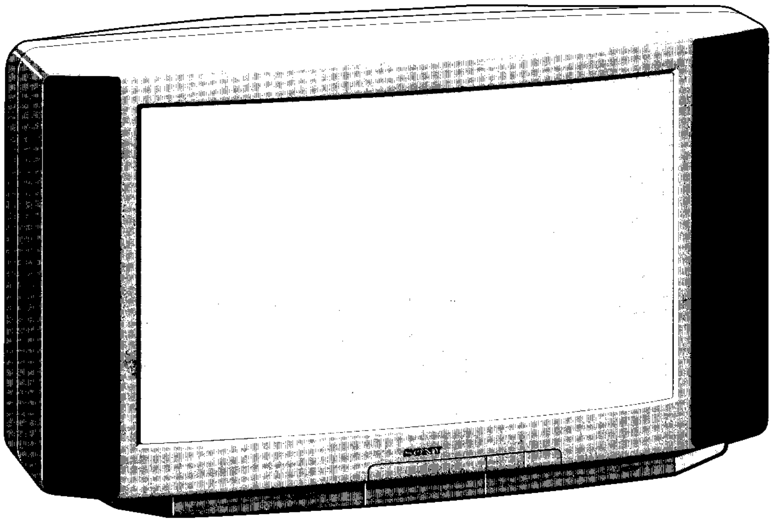
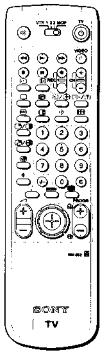
SERVICE MANUAL

AE-4 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-32WS4A	RM-862	Italian	SCC-K43B-A
KV-32WS4B	RM-862	French	SCC-K45B-A
KV-32WS4D	RM-862	AEP	SCC-K41B-A
KV-32WS4E	RM-862	Spanish	SCC-K42B-A
KV-32WS4K	RM-862	OIRT	SCC-K44C-A
KV-32WS4R	RM-862	OIRT	SCC-K44D-A
KV-32WS4U	RM-862	UK	SCC-K46A-A





Super**Trinitron**

WIDE

MICROFILM

TRINITRON® COLOR TV

SONY®

ITEM MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: S1-S20 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, PAL+, SECAM NTSC3.58/4.43 (video input only)
French	B/G/H, D/K, L, I	L SECAM VHF: F2-F10 UHF: F21-F69 TV CABLE TV (1) VHF: B-Q UHF: S21-S44 PAL B/G/H VHF: E2-E12 UHF: E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 PAL I UHF: B21-B69 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, SECAM NTSC3.58/4.43 (video input only)
AEP	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: S1-S20 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, PAL+, SECAM NTSC3.58/4.43 (video input only)
Spanish	B/G/H, D/K	PAL B/G/H VHF: E2-E12 UHF: E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, PAL+, SECAM NTSC3.58/4.43 (video input only)
OIRT	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, PAL+, SECAM NTSC3.58/4.43 (video input only)
UK	I	UHF: U21-U69	PAL, PAL+, SECAM NTSC3.58/4.43 (video input only)

MODEL	32WS4A	32WS4B	32WS4D	32WS4E	32WS4K	32WS4R	32WS4U
Power Consumption	133W	147W	151W	151W	151W	151W	218W

SPECIFICATIONS

Picture Tube	Super Trinitron WIDE Approx. 82 cm (32 inches) (Approx. 76 cm picture measured diagonally) 110˚ deflection

Rear/Front Terminals

[REAR]

→ 21-pin Euro connector (CENELEC standard)
- Inputs for audio and video signals
- Inputs for RGB
- Outputs of TV video and audio signals

→ 2/ →S 2 21-pin Euro connector
- Inputs for audio and video signals
- Inputs for S video
- Outputs for audio and video signals (selectable)

→ Audio outputs (variable) - phono jacks

External speaker terminals : 2-pin DIN (5)

[FRONT]

→ 3 Video input - phono jack
→ 3 Audio inputs - phono jacks
→S 3 S video input - 4 pin DIN
🎧 Headphones jack: stereo minijack

Sound output	2x30W (music power), 2x15W (RMS) Centre 1x30W (Music), 1x15W (RMS) Surround 2x15W(Music), 2x7.5W (RMS)
Dimensions	906x552x566 mm approx.
Weight	Approx. 61.0 kg
Supplied accessories	Remote Commander RM-862 (1) Batteries R6 (2) Surround speaker (2) Surround Loudspeaker lead (2) Centre speaker lead (1) Aerial cable (1)

Other features
Digital comb filter (High resolution)
FASTEXT, DNR (Digital Noise Reduction)
Dolby Digital Surround System, 100Hz Digital Plus
Graphic Equalizer, PAP (Picture and Picture)
PAL plus, Multi PIP
NICAM stereo (KV-32WS4B and 32WS4U only)

[RM-862]

Remote control system	Infrared control
Power requirements	3V dc (2 batteries) R6 (size AA)
Dimensions	Approx. 210x56x24 mm (w/h/d)
Weight	Approx. 110g (Not including battery)

Design and specifications are subject to change without notice.

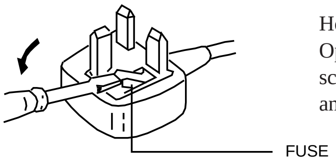
Model name / Item	KV-32WS4A	KV-32WS4B	KV-32WS4D	KV-32WS4E	KV-32WS4K	KV-32WS4R	KV-32WS4U
PIP	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MPIP	ON	ON	ON	ON	ON	ON	ON
Rotation Coil	ON	ON	ON	ON	ON	ON	ON
VM Set (Velocity Modulation)	ON	ON	ON	ON	ON	ON	ON
PAL +	ON	ON	ON	ON	ON	ON	ON
Scart 1	ON	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON	ON	ON
AKB in 16:9 mode	ON	ON	ON	ON	ON	ON	ON
TXT	ON	ON	ON	ON	ON	ON	ON
FLOF	ON	ON	ON	ON	ON	ON	ON
TOP	ON	ON	ON	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	ON	ON	ON	OFF
Norm I	OFF	ON	OFF	OFF	OFF	OFF	ON
Norm D/K	ON	ON	ON	ON	ON	ON	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF	OFF
Language Preset	Italian	French	German	Spanish	OIRT	OIRT	UK

WARNING (KV-32WS4U only)

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the ASTA mark.

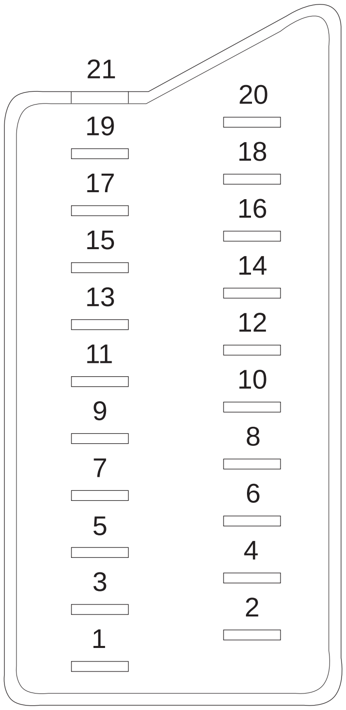
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with the screwdriver blade
and replace the fuse.

21 pin connector (→ 1)



Pin No.	1	2	4	Signal	Signal Level
1	○	○	○	Audio output B (Right)	Standard level : 0.5V rms Output impedance : Less than 1k ohms*
2	○	○	○	Audio input B (Right)	Standard level : 0.5V rms Output impedance : More than 10k ohms*
3	○	○	○	Audio output A (Left)	Standard level : 0.5V rms Output impedance : Less than 1k ohm*
4	○	○	○	Ground (Audio)	
5	○	○	○	Ground (Blue)	
6	○	○	○	Audio input A (Left)	Standard level : 0.5V rms Output impedance : Less than 10k ohm*
7	○	●	●	Blue input	0.7 ± 3dB, 75 ohms, positive
8	○	○	○	Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More10k ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (Green)	
10	○	○	○	Open	
11	○	●	●	Green	
12	○	○	○	Open	
13	○	○	○	Ground (Red)	
14	○	○	○	Ground (Blanking)	
15	○	—	—	Red input	0.7 ± 3dB, 75 ohms, positive
	—	○	○	(S signal) croma input	0.7 ± 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (Video output)	
18	○	○	○	Ground (Video input)	
19	○	○	○	Video output	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
20	○	—	—	Video input	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
	—	○	○	Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
21	○	○	○	Common ground (plug, sheild)	

○ Connected ● Not Connected (Open) * at 20Hz - 20kHz

Pin No.	Signal	Signal Level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm, positive Sync. 0.3V -3 + 10dB
4	C (S signal) input	0.3V ± 3dB 75ohm, positive Sync.

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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.
LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

SAFETY-RELATED COMPONENT WARNING!!

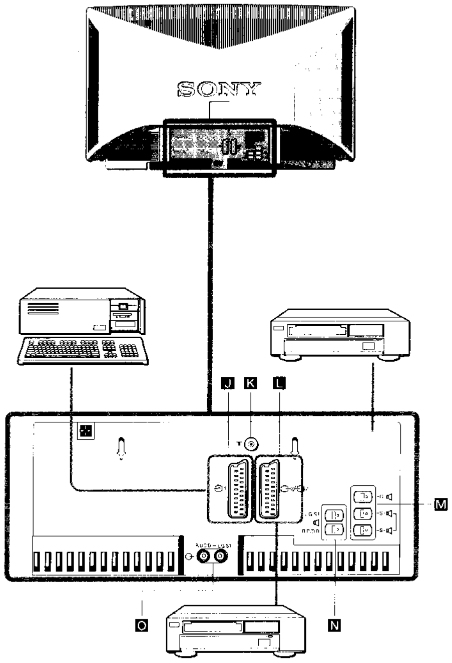
COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

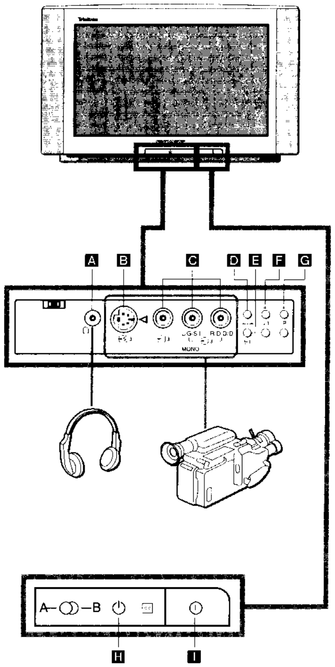
ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE PUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in the manual.


SONY
J
K
L
M
N
O


A
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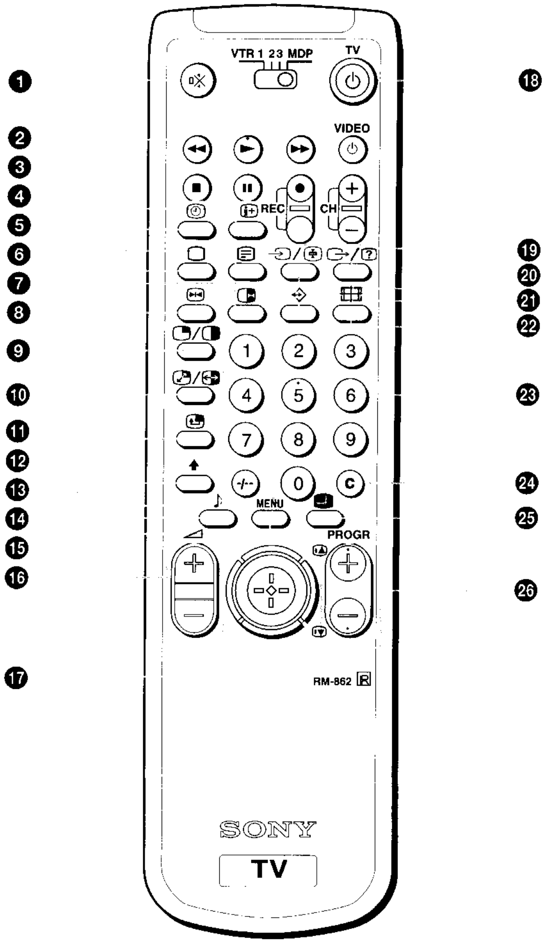
I


❶
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⓮
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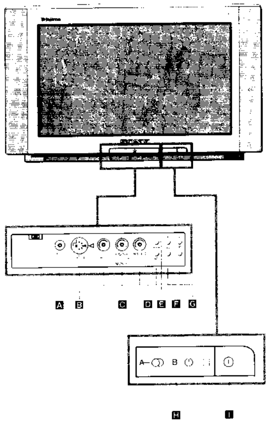
⓰
⓱
VTR 1 2 3 MDP
TV
VIDEO
REC
CH
1
2
3
4
5
6
7
8
9
-/--
0
C
MENU
PROGR
RM-862
SONY
TV
⓲
⓳
⓴
㉑
㉒
㉓
㉔
㉕
㉖

Overview

This section briefly describes the buttons and controls on the TV set and on the Remote Commander. Please open the flaps at the front and at the back of the Instruction Manual for detailed illustrations of the Remote Commander and the TV set. Letters in boxes refer to the buttons and connectors on the TV set, numbers in circles to the buttons on the Remote Commander. For more information, refer to the pages given next to each description.

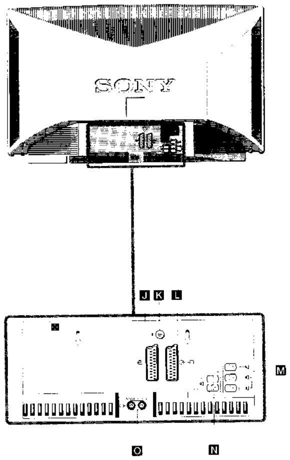
TV set – front

Reference and Symbol	Name	Refer to page
A ∩	Headphones jack	13
B ⇨Ⓢ 3	S video input jack	20
C ⇨ 3, ⇨ 3	Input jacks (video, audio)	20
D →•←	Reset button	7
E ⇨	Input mode button	7
F ◿ +/-	Volume control	7
G P +/-	Programme buttons	7
H ⏻	Standby mode indicator	7
I ⏽	Main power switch	7



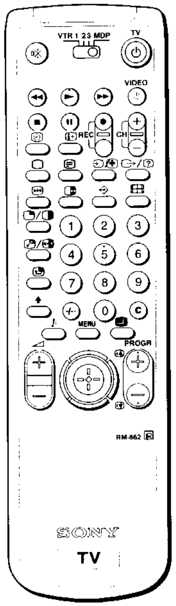
TV set – rear

Reference and Symbol	Name	Refer to page
J ⇨1	21-pin Euro connector	20
K ╥	Aerial socket	5
L ⇨2/⇨Ⓢ2	21-pin Euro connector	20
M C 🕨, S 🕨, S 🕨,	External speaker terminals (Centre, Surround)	4
N L/G/S/I R/D/D/D 🕨	Left and right speaker terminals	4
O ⇨ R/D/D/D L/G/S/F	Audio phono jacks	20



Remote Commander

Reference and Symbol	Name	Refer to page
❶ 🔇	Muting on/off button	7
❷	**VCR operation**	21
VTR 123 MDP	Video equipment selector	21
◀◀ ▶ ▶▶ ■ ❚❚ ●	Video equipment operation buttons	21
VIDEO ⏻, CH +/–		
❸ ⓘ+	On-screen display button	7
❹ ◷	Time display button	7
❺ ☰	Teletext button	7, 17
❻ ▢	TV power on/TV mode button	7
❼ ◨	PAP freeze button	16
❽ ⊟	Freeze button	7
❾ ◳/◨	PAP on/off button	16
❿ ⇄/⇄	PAP Swap button	16
⓫ ◧	No function on this set	
⓬ 🠉	PAP source selector	16
⓭ - / - -	Double digit entering button	7
⓮ ♪	Sound mode button	13
⓯ MENU	Menu on/off button	8
⓰ ◿ +/-	Volume control button	7
⓱	Joystick for Menu selection	8
	Press to confirm selection (OK function)	
⓲ TV ⏻	TV standby button	7
⓳ ⇨	Output mode selector	20
	Teletext: Reveal button	17
⓴ ⇨	Input mode selector	7
⊟▲	Teletext: Freezing the subpage	17
㉑ ⟐	Teletext: Favourite pages button	19
㉒ ⊞	Screen format button	7
㉓ 1, 2, ... 9, 0	Number buttons	7
㉔ C	Direct channel entering button	7
㉕ ●	Picture mode button	13
㉖ PROGR +/-	Programme buttons	7
▲▼	Teletext: Page up/page down buttons	17



Basic Operation

Step 1 Installation

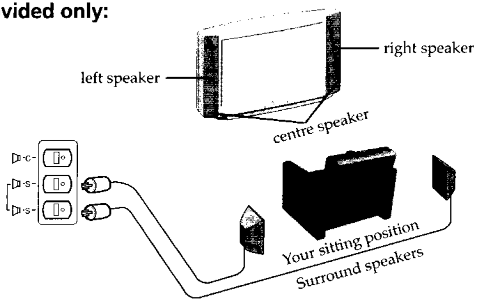
A Connecting the Speakers

! Before first switching the TV on, make sure to connect the speakers to the TV.

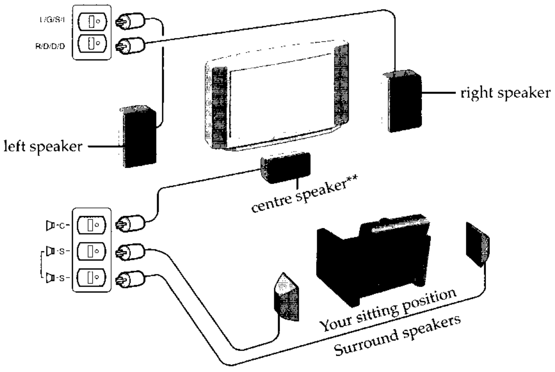
Connect the speakers using the leads provided. The striped lead (+) is for the red terminal of the speaker. The black lead (–) is for the black terminal.
When using your own speakers, make sure they are at least 8 ohms impedance and magnetically shielded.

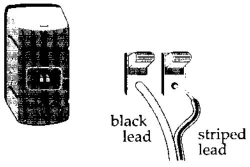
Dolby* Pro Logic Surround normally requires 5 speakers:
Centre speaker (incorporated in the TV) – for anchoring the stable sound image, like dialogues, to the TV screen.
Left and right front speakers (incorporated in the TV) – for the normal two channel stereo or bilingual broadcasts.
Surround speakers – for the special effects created by the surround channel.

Connect the speakers provided only:


right speaker
left speaker
centre speaker
C
S
S
Your sitting position
Surround speakers

Connect your own speakers:


L/G/S/I
R/D/D/D
right speaker
left speaker
centre speaker**
C
S
S
Your sitting position
Surround speakers

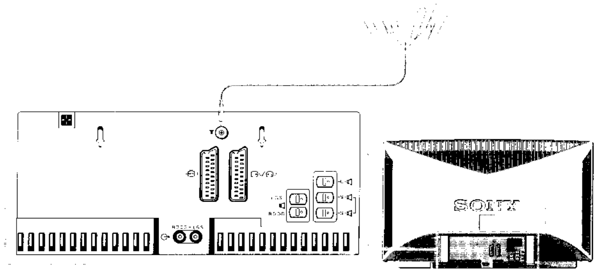

black lead
striped lead

---

*Manufactured under license from Dolby Laboratories Licensing Corporation. »Dolby«, the double-D symbol and »Pro Logic« are trademarks of Dolby Laboratories Licensing Corporation.
** Use the supplied speaker cable to connect the centre speaker.

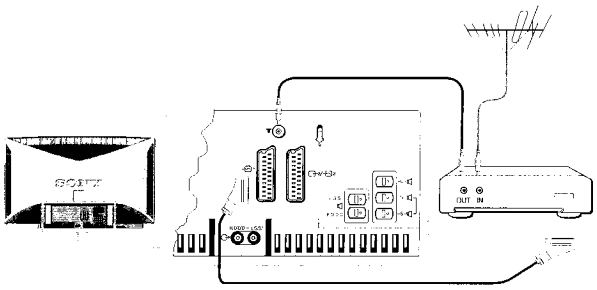
B Connecting the Aerial

(If you connect a VCR, skip to step C)
Insert the aerial plug of the supplied aerial cable tightly into the aerial socket ⊤ **K**.



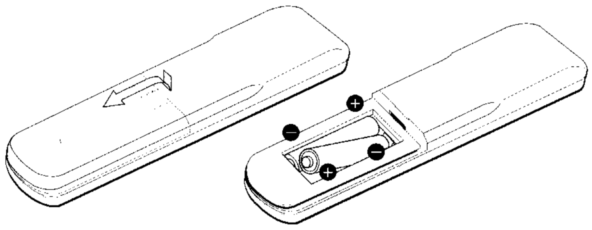
C Connecting a VCR

We recommend that you tune in the VCR signal to the programme position »0«.
Use the preset function »Manual Programme Preset« (page 8) to do this.



D Inserting the batteries into the Remote Commander

Insert the batteries checking the correct polarities.



! Respect your environment! Dispose of used batteries in an evironmental friendly way.

Step 2 Basic Presetting

A Choosing the Menu Language and the Country

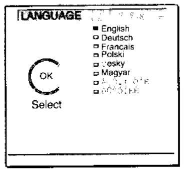
Using this function you select the language of the menu screens. Also you select the country in which you will use the TV. In this way the channels of the selected country will automatically get the top positions during automatic presetting.

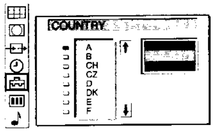
1 Press the power switch ① 🅸 on the TV. If the standby indicator ⏻ 🅷 on the TV is lit, press ▢ ❻ or a number button ㉓ on the Remote Commander. Press the MENU button ⓯ on the Remote Commander. The menu LANGUAGE appears.

2 Push the joystick ⓱ to blue or green to select the language. Press the joystick ⓱ to confirm your selection. The menu COUNTRY appears.

3 Push the joystick ⓱ to blue or green to select the country in which you wish to operate the TV. Press the joystick ⓱ to confirm the selection.

4 Press MENU ⓯ to restore the normal TV picture.


LANGUAGE
■ English
☐ Deutsch
☐ Francais
☐ Polski
☐ Česky
☐ Magyar
☐ [illegible]
☐ [illegible]


COUNTRY
■ A
☐ B
☐ CH
☐ CZ
☐ D
☐ DK
☐ E
☐ F

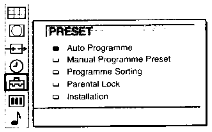
B Presetting Channels Automatically

With this function the TV automatically searches and stores up to 100 channels onto programme positions. If you prefer »Manual Presetting of channels« please refer to page 8 in Advanced Operation.

1 Press MENU ⓯.

2 Push the joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen, then push to yellow.

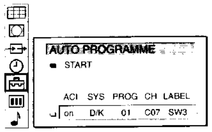
3 Push the joystick ⓱ to blue or green to select »Auto Programme«, then push to yellow. The menu AUTO PROGRAMME appears.


PRESET
■ Auto Programme
☐ Manual Programme Preset
☐ Programme Sorting
☐ Parental Lock
☐ Installation

4 a) All items shown on the menu screen are as wanted: Press joystick ⓱ to select START. Now the automatic channel presetting starts from programme position 1.

or

4 b) You wish to change items as shown on the menu screen: Push the joystick ⓱ to blue or green. Push to yellow repeatedly until the desired item is highlighted.


AUTO PROGRAMME
■ START

ACI	SYS	PROG	CH	LABEL
on	D/K	01	C07	SW3

Push the joystick ⓱ to blue or green to select the following possibilities:

ACI
(Automatic Channel Installation, depending on availability of service in your country)
on: fast channel presetting by special networks using the channel frequency (e.g. F055) TV-system and station label
off: ACI is not active, only ITP (Intelligent Tuner Preset)

SYS (TV Broadcast System)
B/G for Western European Countries
D/K for Eastern European Countries

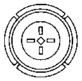
PROG (Programme Position)
Presetting automatically starts from position 1.

CH (channel)
C to start presetting with terrestrial channels
S to start presetting with cable channels

Press the joystick ⓱ as soon as the automatic presetting should start.

5 When presetting is finished the normal TV picture appears.

Joystick

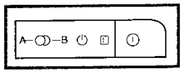


Step 3 TV operation

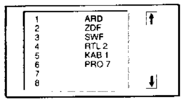
Using Direct Access Buttons

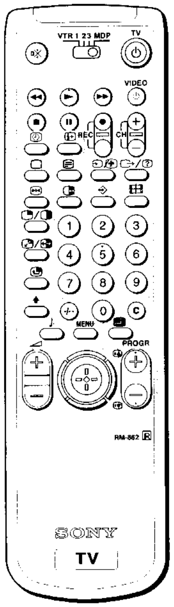
This section explains functions used while watching TV. Most operations are carried out using the Remote Commander (numbers in circles). All basic functions are also available on the TV set itself (letters in boxes).

To	Press
Switch on	• ① 🅸 on TV.
Switch off temporarily (Standby mode)	• ⏻ ⓲. TV is now in standby mode and indicator ⏻ 🅷 lights up.
Switch on from standby mode	• ▢ ❻, PROGR +/- ㉖ 🅶 or any number button ㉓.
Switch off completely	• ① 🅸 on TV. ! To save energy, we recommend to switch off your TV completely when TV is not in use.
Select programmes	• PROGR +/- ㉖ 🅶 or number buttons ㉓. For double digit number, press -/-- ⓭, then the two number buttons ㉓. E.g. for 24, press ⓭, then 2 and 4.
Display a programme table	• The joystick ⓱. Push the joystick ⓱ to blue or green to select a programme, then press the joystick ⓱ to confirm.
Display on screen indications	• ⓘ ❸. Press again to make the indications disappear.
Adjust the volume	• ⊿ + or - ⓰ 🅵.
Mute the sound	• 🔇 ❶. Press again to restore the sound.
Display the time (only available when teletext is broadcast)	• ⊙ ❹. Press again to make the display disappear.
Tune in a channel temporarily	• »C« ㉔ once for terrestrial channels, twice for cable channels. The indication »C« or »S« for cable channels appears. Enter the channel number with two digits, e.g. for 4, press 0, then 4.
View the input of a connected device (see also page 20)	• ⇥ ⓴ 🅴 repeatedly until the desired input signal appears. Press ▢ ❻ to restore the normal TV picture.
View teletext (see also page 17)	• ⊜ ❺ to switch on. Input a page number, using the number buttons ㉓ (e.g. for page 125, press 1, 2 and 5). ▢ ❻ to switch off.
Change the screen mode (see also page 15)	• ⊞ ㉒ repeatedly. The mode changes as follows: Auto Wide → Smart → Zoom/PAL Plus → Wide → 4:3
Freeze the picture	• ⊟ ❽. Press again to restore the normal TV picture.
Reset picture settings to factory levels	• →•← 🅳.



PROGRAMME TABLE


1 ARD
2 ZDF
3 SWF
4 RTL 2
5 KAB 1
6 PRO 7
7
8



Advanced Operation

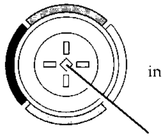
Using the Menu System

Use the following buttons on the Remote Commander to operate the Menu system:

1 Press MENU button ⑮ to switch menu on or off.

MENU

2 Use the joystick ⑰ as follows:



GREEN : scroll up

RED :
decrease/back to last item or to last menu
When menu is not displayed:
Push to red to display the last menu screen

YELLOW :
increase/forward
to next item

BLUE : scroll down

Joystick: Press at its neutral
position to confirm selection or store

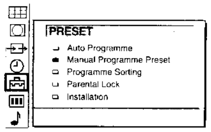
Advanced Presetting

Presetting Channels Manually

Using this function you can preset channels one by one to different programme positions. It is also convenient to allocate programme numbers to video input sources.

1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm the selection.

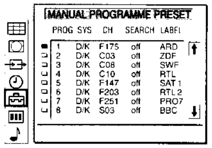


PRESET

- Auto Programme
- Manual Programme Preset
- Programme Sorting
- Parental Lock
- Installation

3 Push to blue or green to select »Manual Programme Preset«. Push to yellow to confirm the selection.

4 Push to blue or green to select the programme position (PROG) to which you want to preset a channel. Push to yellow to confirm.



MANUAL PROGRAMME PRESET

PROG	SYS	CH	SEARCH	LABEL
1	D/K	F175	off	ARD
2	D/K	C03	off	ZDF
3	D/K	C08	off	SWF
4	D/K	C10	off	RTL
5	D/K	F147	off	SAT 1
6	D/K	F203	off	RTL 2
7	D/K	F251	off	PRO7
8	D/K	S03	off	BBC

5 Push to blue or green to select the TV broadcast system (SYS) (B/G for western European countries, D/K for eastern European countries) or a video input source (EXT). Push to yellow to confirm.

6 Push to blue or green to select »C« (for terrestrial channels), »S« (for cable channels) or »F« (for channel frequency). Push to yellow to confirm.

There are two possibilities to preset channels manually:

a) You know the channel number or channel frequency.
Please use method »Direct input«.

or

b) You don't know the channel number or frequency.
Please use method »Search«.

continued >>>>>>>>>

Advanced Presetting

7a) Direct Input

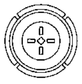
For channel numbers you need to input a two digit number, for the frequency a three digit number.

- Push to blue or green to select the first digit of the channel number or frequency. Push to yellow to confirm.
- Push to blue or green to select the second digit of the number or frequency. Push to yellow to confirm. In case of the channel number the search starts.
- Push to blue or green to select the third digit of the frequency number. Push to yellow to start the search of the frequency.
- To continue search for another channel: Push to blue or green.
- To store the selected channel: Press the joystick ⑰.
- Repeat steps 4 to 7a) to preset other channels.

7b) Search

- Push repeatedly to yellow until a blue and a green arrow appear in the section SEARCH.
- Push to blue or green to search for the next available channel.
- To continue search for another channel: Push to blue or green.
- To store the selected channel: Press the joystick ⑰.
- Repeat steps 4 to 7b) to preset other channels.

Joystick

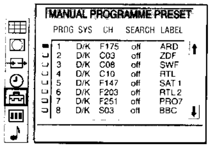


Captioning a Station Name

Channels are usually automatically labelled during presetting. You can, however, individually name a channel or a video source using up to five characters.

1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.



MANUAL PROGRAMME PRESET

PROG	SYS	CH	SEARCH	LABEL
1	D/K	F175	off	ARD
2	D/K	C03	off	ZDF
3	D/K	C08	off	SWF
4	D/K	C10	off	RTL
5	D/K	F147	off	SAT 1
6	D/K	F203	off	RTL 2
7	D/K	F251	off	PRO7
8	D/K	S03	off	BBC

3 Push to blue or green to select »Manual Programme Preset«. Push to yellow to confirm.

4 Push to blue or green to select the programme position with the channel you want to label. Push to yellow repeatedly until the first element of the position LABEL is highlighted.

5 Push to blue or green to select a letter or a number (select »-« for a blank). Push to yellow to confirm. Select the other four characters in the same way.

6 After selecting all characters, press the joystick ⑰.

7 Repeat steps 4 to 6 to label other channels or video sources.

8 Press MENU ⑮ to restore the normal TV picture.

Skipping Programme Positions

This function enables you to skip unused programme positions when selecting them with the PROGR +/- buttons. However, by using the number buttons you can still select the skipped programme position.

1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Manual Programme Preset«. Push to yellow to confirm.

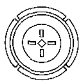
4 Push to blue or green to select the programme position you want to skip. Push to yellow to confirm.

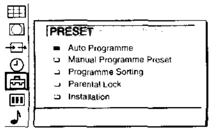
5 Push to blue or green to select »---« in the position SYS (system). Press the joystick ⑰ to confirm.

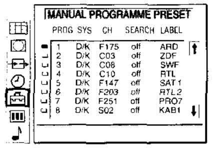
6 Repeat steps 4 and 5 to skip other programme positions.

7 Press MENU ⑮ to restore the normal TV picture.

Joystick







MANUAL PROGRAMME PRESET

PROG	SYS	CH	SEARCH	LABEL
1	D/K	F175	off	ARD
2	D/K	C03	off	ZDF
3	D/K	C08	off	SWF
4	D/K	C10	off	RTL
5	D/K	F147	off	SAT 1
6	D/K	F203	off	RTL 2
7	D/K	F251	off	PRO7
8	D/K	S02	off	KAB1

Sorting Programme Positions

This function enables you to sort the programme positions to a preferable order.

1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

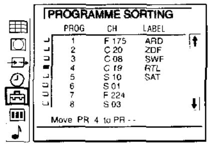
3 Push to blue or green to select »Programme Sorting«. Push to yellow to confirm.

4 Push to blue or green to select the programme position of the channel you want to exchange. Press joystick ⑰ to confirm.

5 Push to blue or green to select the programme position of the second channel. Press joystick ⑰ to confirm. Now the two programme positions are swapped and sorted.

6 Repeat steps 4 and 5 to sort other programme positions.

7 Press MENU ⑮ to restore the normal TV picture.



PROGRAMME SORTING

PROG	CH	LABEL
1	F 175	ARD
2	C 20	ZDF
3	C 08	SWF
4	C 19	RTL
5	S 10	SAT
6	S 01	
7	F 224	
8	S 03	

Move PR 4 to PR - -

Using Parental Lock

This function enables you to prevent children watching undesirable broadcasts.

1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

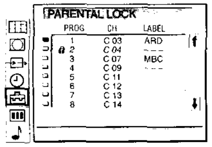
3 Push to green or blue to select »Parental Lock«. Push to yellow to confirm.

4 Push to green or blue to select the channel you want to block. Press the joystick ⑰ to confirm. The symbol 🔒 appears before the programme position to indicate that this channel is now blocked.

5 Repeat step 4 to block other channels.

6 Press MENU ⑮ to restore the normal TV picture.

! To unblock: Select the channel to unblock in the menu »Parental Lock«. Press the joystick ⑰. The symbol 🔒 disappears.



PARENTAL LOCK

	PROG	CH	LABEL
	1	C 03	ARD
🔒	2	C 04	- - -
	3	C 07	MBC
	4	C 09	- - -
	5	C 11	
	6	C 12	
	7	C 13	
	8	C 14	

Using »Further Programme Preset«

Using the menu »Further Programme Preset« you can

a) in case of a strong local aerial signal (striped picture) attenuate the signal individually for each programme position (RF attenuator).

b) individually adjust and store the volume level of each channel (Volume offset).

c) in case of picture or sound distortions use manual fine tuning to obtain a better picture quality. The factory setting is »on« for AFT (Automatic Fine Tuning).

1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Installation«. Push to yellow to confirm.

4 Push to blue or green to select »Further Programme Preset«. Push to yellow to confirm.

5 Push to blue or green to select the programme position you want. Push to yellow repeatedly to select:
a) ATT (RF attenuator), b) VOL (Volume Offset) or c) AFT (Automatic Fine Tuning). The selected item changes colour.

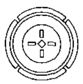
6a) ATT
Push to blue or green to select »ON« for the programme position and press the joystick ⑰ to confirm. Repeat step 6 to attenuate other programme positions.

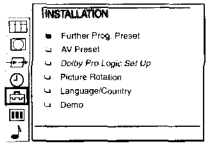
b) VOL
Push to blue or green to adjust the volume for the selected programme position within a range of -7 to +7. Press the joystick ⑰ to confirm. Repeat step 6 to set the volume level for other programme positions.

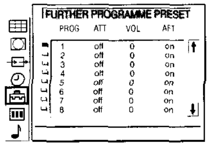
c) AFT
Push to blue or green to fine-tune the channel within a range of -15 to +15. Press the joystick ⑰ to confirm. Repeat step 6 to fine-tune other channels.

7 Press MENU ⑮ to restore the normal TV picture.

Joystick







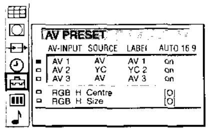
FURTHER PROGRAMME PRESET

PROG	ATT	VOL	AFT
1	off	0	on
2	off	0	on
3	off	0	on
4	off	0	on
5	off	0	on
6	off	0	on
7	off	0	on
8	off	0	on

Using »AV Preset«

Using this function you can preset the desired input source (e.g. ⊕1, RGB signal) to *the respective AV input (AV1). In this way a connected VCR switches automatically* to the RGB signal. Also you can label the input sources.

1 Press MENU ⑮.
2 Push joystick ⑰ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.
3 Push to blue or green to select »Installation«. Push to yellow. Push to blue or green to select »AV Preset«. Push to yellow to confirm.
4 Push to blue or green to select the desired AV input. Push to yellow to confirm.
5 Push to blue or green to select the desired source. Push to yellow to confirm. For the respective AV inputs you have the following choice:
AV1: RGB or AV
AV2: YC2 or AV
AV3: YC3 or AV
6 To label a source: Push to blue or green to select the first character (letter or number, »-« for a blank). Push to yellow to confirm. Select the other four characters in the same way.
7 For automatic format and PAL plus selection (Auto 16:9):
Push to blue or green to select »On« for the AV input.
8 Press the joystick ⑰ to store.
9 Repeat steps 4 to 8 for the other AV inputs.
10 For RGB input source only: Push to blue or green to select RGB H Centre.
- Push to yellow to confirm.
- Push to blue or green to adjust the centre of the picture in a range of -5 to +5. *Press the joystick ⑰ to store.*
- Repeat step 10 to adjust RGB H Size.
11 Press MENU ⑮ to restore the normal TV picture.



AV PRESET

AV-INPUT	SOURCE	LABEL	AUTO 16 9
AV 1	AV	AV 1	on
AV 2	YC	YC 2	on
AV 3	AV	AV 3	on
RGB H Centre			[O]
RGB H Size			[O]

Advanced Presetting

Setting up Dolby Pro Logic

Before listening to Dolby Pro Logic encoded programmes, you should adapt the Dolby Pro Logic features to your individual requirements. This setting up of the levels and modes of the speakers normally is required only when installing the TV and the speakers or when changing the position of the speakers.

1 Press MENU ⓯.

2 Push joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Installation«. Push to yellow to confirm.

4 Push to blue or green to select »Dolby Pro Logic Set up«. Push to yellow to confirm.

5 Push to yellow. The setting »Left« (sound level of the left speaker) changes colour. You hear a test tone from the left speaker.

6 Push to yellow. Push to red or yellow to adjust the level. Press the joystick ⓱ to confirm.

7 Push to blue or green to select Centre (Centre speaker), Right (right speaker) or Surround (Surround speakers). Repeat step 6 to adjust the sound level of a speaker. Repeat steps 6 and 7 to adjust all sound levels (from your sitting position all levels should be the same). Push to red.

8 Push to blue to select »Speaker mode«. Push to yellow to confirm.

9 Push to blue or green to select:

Normal	- all speakers are activated
Phantom	- centre speaker is not used
Wide	- wider bandwidth sound effect
3 Normal	- surround speakers are not used
3 Wide	- surround speakers are not used, centre speaker carries full frequency response

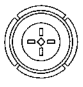
Press the joystick ⓱ to confirm.

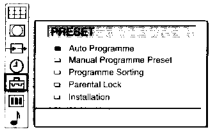
10 Push to blue or green to select »Delay Time«. Push to yellow to confirm. Push to blue or green to select the delay time of the surround speakers (e.g. 20 ms for standard rooms, 30 ms for small rooms).
15 ms → 20 ms → 25 ms → 30 ms
Press the joystick ⓱ to confirm.

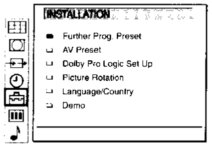
11 Push to blue or green to select »Auto Surround«. Push to yellow to confirm. Push to blue or green to select:
On - When receiving a Dolby Surround encoded programme, the TV automatically switches to Dolby Surround sound (depending on availability of service by broadcaster).
Off - normal
Press the joystick ⓱ to confirm.

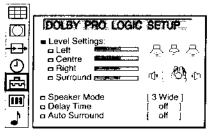
12 Press the MENU button ⓯ to restore the normal TV picture.

Joystick




PRESET
Auto Programme
Manual Programme Preset
Programme Sorting
Parental Lock
Installation


INSTALLATION
Further Prog. Preset
AV Preset
Dolby Pro Logic Set Up
Picture Rotation
Language/Country
Demo


DOLBY PRO LOGIC SETUP
Level Settings:
Left
Centre
Right
Surround
Speaker Mode
[3 Wide]
Delay Time
[off]
Auto Surround
[off]

Adjusting the Picture Rotation

If, due to the earth magnetism, the picture slants, you can use this function to readjust the picture.

1 Press MENU ⓯.

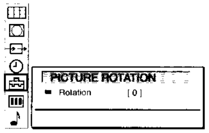
2 Push joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Installation«. Push to yellow to confirm.

4 Push to blue or green to select »Picture Rotation«. Push to yellow to confirm.

5 Push to yellow. Push to blue or green to adjust the picture rotation. The adjusting range is - 4 to + 4. Press the joystick ⓱ to confirm.

6 Press MENU ⓯ to restore the normal TV picture.


PICTURE ROTATION
Rotation
[0]

Advanced TV operation

Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste.

1 Press ● ㉕ (for Picture) or ♪ ⓮ (for Sound)
or
Press MENU ⓯.
Push joystick ⓱ to blue or green to select ▥ for Picture Control or ♪ for Sound Control. Push to yellow to confirm. The menu PICTURE CONTROL or SOUND CONTROL appears.

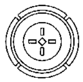
2 Push to blue or green to select the desired item. Push to yellow to confirm.

3 Push to red or yellow to adjust the selected item. Press the joystick ⓱ to confirm. For the effect of each control, see the following tables.

4 Repeat steps 2 and 3 to adjust other items.

5 Press MENU ⓯ to restore the normal TV picture.

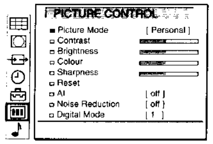
Joystick



Picture Control

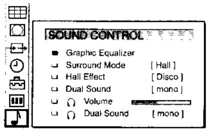
Item	Effect
Picture Mode	• Personal → Economy (energy saving setting) → Live → Sports → Movie → Game
Contrast	• Less ——I—— More
Brightness*	• Darker ——I—— Brighter
Colour*	• Less ——I—— More
Hue**	• Greenish ——I—— Reddish
Sharpness*	• Softer ——I—— Sharper
Reset	• Resets picture to the factory preset levels
AI	• Off: Normal On: Automatic optimization of contrast level according to TV signal
Noise Reduction	• Off: Normal On: Reduction of picture noise in case of weak signals
Digital Mode	• 1: Normal 2: LFR (Line Flicker Reduction) off

* Only if »Personal« or »Economy« is selected in »Picture Mode«.
** Available for NTSC colour system only.


PICTURE CONTROL
Picture Mode
[Personal]
Contrast
Brightness
Colour
Sharpness
Reset
AI
[off]
Noise Reduction
[off]
Digital Mode
[1]

Sound Control

Item	Effect
Graphic Equalizer	• See page 14 for details
Surround Mode	• Off: normal → Pro Logic → Hall
Hall Effect (only if Hall is on)	• Choice between different hall effects Church → Hall → Stadium → Disco
Dual Sound	• A: channel 1 or B: channel 2 Stereo → Mono
Headphones	
∩ Volume	• Less ——I—— More
∩ Dual Sound	• A: channel 1 or B: channel 2 → PAP (if PAP is switched on, you can select the PAP sound for the headphones) → Stereo → Mono


SOUND CONTROL
Graphic Equalizer
Surround Mode
[Hall]
Hall Effect
[Disco]
Dual Sound
[mono]
Volume
Dual Sound
[mono]

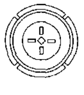
Using the Graphic Equalizer

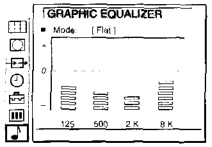
Using this function you can individually adjust the sound by cutting and boosting selected frequencies. Also you can select between the following settings:

Flat → User → Vocal → Jazz → Rock → Pop

1. Press MENU ⑮.
2. Push the joystick ⑰ to blue or green to select the symbol ♪ on the menu screen. Push to yellow to confirm.
3. *Push to blue or green to select »Graphic Equalizer«. Push to yellow to confirm.*
4. Push to yellow. The colour of »Mode« changes. Push to blue or green to select the mode you want.
5. If you want to modify a mode, push repeatedly to yellow until the desired bar of a frequency band changes colour. Push to blue or green to change the level of a bar. In this way you can adjust all 4 graphic bars.
6. Press joystick ⑰ to store the adjustment.
7. Press MENU ⑮ to restore the normal TV picture.

Joystick





GRAPHIC EQUALIZER

■ Mode: [Flat]

Presetting Dolby Pro Logic

To enjoy Dolby Surround encoded programmes, preset the setting »Surround Mode« in the menu »Sound Control« to »Pro Logic«. After the end of the broadcast make sure to return the setting to »Off«.

1 Press button ♪ ⑭ on the Remote Commander.

2 Push joystick ⑰ to blue or green to select »Surround Mode«.
Push to yellow to confirm.

3 Push to green or blue to select »Pro Logic«. Press the joystick ⑰ to confirm.

4 Press MENU ⑮ to restore the normal TV picture.

Using the Sleep Timer

This function enables you to select a time period after which the TV automatically switches into standby mode.

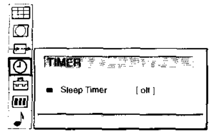
1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select the symbol ◷ on the menu screen.
Push to yellow to confirm.

3 Push to yellow. Push to blue or green to select the time.
OFF → *10 min → 20 min ....80 min → 90 min.*
Press the joystick ⑰ to confirm.

! One minute before the TV switches into standby mode, a message is displayed on *the screen.*

4 Press MENU ⑮ to restore the normal TV picture.



TIMER

■ Sleep Timer [off]

Using »Multi PIP«

Using »Multi PIP« you can scan 12 successive TV channels on the screen (Programme Catching) or display 11 successive freeze pictures on the screen (Photo Mode).

1 Press MENU ⑮.

2 *Push joystick ⑰ to blue or green to select the symbol ▦ on the menu screen.*
Push to yellow to confirm.

a) Programme Catching

Push to blue or green to select »Programme Catching«. Press the joystick ⑰.
Now a scan of 12 successive programmes (11 still pictures, 1 live picture where the cursor is positioned) is displayed on the screen starting from the programme tuned in. Pushing the joystick to blue, green, red or yellow you can move the cursor in all directions and update the still pictures. When selecting a programme position lower or higher than the 12 displayed ones the programme scanning starts again.
Press MENU ⑮ to restore the normal TV picture.

Selecting a programme using Programme Catching:

Push the joystick ⑰ to blue, green, red or yellow to select the programme position you want, then press the joystick ⑰. Now the selected programme appears and you are back in the normal TV mode.

b) Photo mode

Push to blue or green to select »Photo mode«. Press the joystick ⑰. Now the main picture is displayed as a succession of 11 still pictures and a 12th picture, which is live. Push to blue or green to start the photo mode again. Press the joystick ⑰ to restore the normal TV picture.

Operating Screen Mode

Using Screen Mode you can change the aspect ration of the screen for wide screen effects, operate PAP (picture and picture) or reproduce the main picture image by image (Strobe function).

1 Press MENU ⑮.

2 *Push joystick ⑰ to blue or green to select the symbol ▢ on the menu screen.*
Push to yellow to confirm.

3 Push to blue or green to select »Screen Mode«. Push to yellow to confirm.
Push to blue or green to select one of the following modes:

- Smart - imitation of wide screen effect (16:9) for 4:3 broadcasts.
- Zoom - imitation of wide screen effect (16:9) for movies broadcast in cinemascopic format.
- Wide - for 16:9 broadcasts
- 4:3 - conventional 4:3 picture
- AutoWide - automatic selection of the optimum screen ratio (e.g. 4:3 picture automatically changes to Smart mode, 16:9 picture changes to Zoom mode)

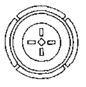
Press the joystick ⑰ to confirm the selection.

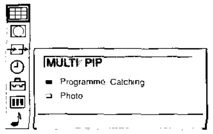
4 *Only in Zoom Auto Wide Mode: Changing the Screen position*
In Zoom mode parts ot the top and bottom of the picture are cut off. Using »Screen position« you can move the screen up- or downwards in order to see the cut-off parts (e.g. to read subtitles). Push to blue or green to select »Screen position«. Push to yellow to confirm.
Push to blue or green to adjust the screen position (-10 to +10 or -5 to +5).
Press the joystick ⑰ to confirm.

5 *Strobe Mode*
Push to blue or green to select »Strobe«. Push to yellow to confirm. The TV picture is now displayed image by image, creating a slow motion effect. Push to blue or green to select the speed of the motion. Press the joystick ⑰ to restore the normal TV picture.

6 PAP (picture and picture)
Push to blue or green to select »PAP«. Push to yellow to confirm. Push to blue or green to select:
1 – PAP screen in 8:9 format, 2 – PAP screen in 4:3 format, Off – PAP switched off
Press joystick ⑰ to confirm.

Joystick

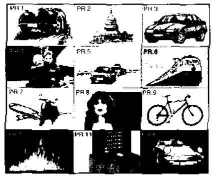


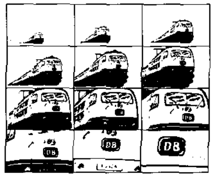


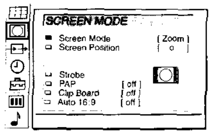
MULTI PIP

■ Programme Catching

□ Photo







SCREEN MODE

■ Screen Mode [Zoom]

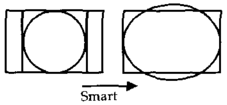
□ Screen Position [0]

□ Strobe

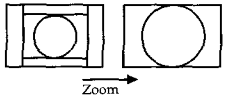
□ PAP [off]

□ Clip Board [off]

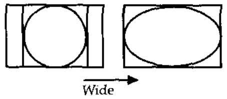
□ Auto 16:9 [off]



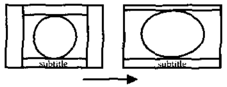
Smart



Zoom



Wide



Auto Wide

continued >>>>>>>>>

Advanced TV operation

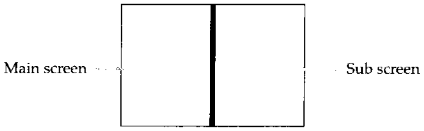
7 Clipboard
Push to blue or green to select »Clipboard«. Push to yellow to confirm. Push to blue or green to select »On« to freeze the PAP screen or »Off« for normal picture.
Press joystick ⑰ to confirm.

8 Auto 16:9
Push to blue or green to select »Auto 16:9«. Push to yellow to confirm.
Push to blue or green to select »On« for automatic selection of format or PAL plus in case of PAL plus broadcast or »Off« for normal mode.
Press joystick ⑰ to confirm.

9 Press MENU ⑮ to restore the normal TV picture.

PAP (Picture and Picture)

With PAP you can view two programmes simultaneously (e.g. two TV channels or a video source and a TV channel). The left screen is the main screen with the sound from the speakers, the right screen is the sub screen with the sound selectable via headphones.

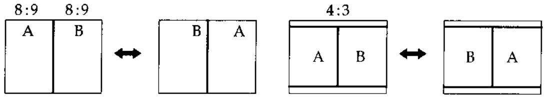


Switching PAP on and off

Press ◰/◨ ⑨ once to display the screens in format 8:9, twice to display the screens in format 4:3 and three times to switch PAP off.

Selecting a PAP source

Press 🠅 ⑫.
The symbol 🠅 appears in the sub screen. Select the PAP source using PROGR +/– ㉖, the number buttons ㉓ or ⇥ ⑳ (for a video source).

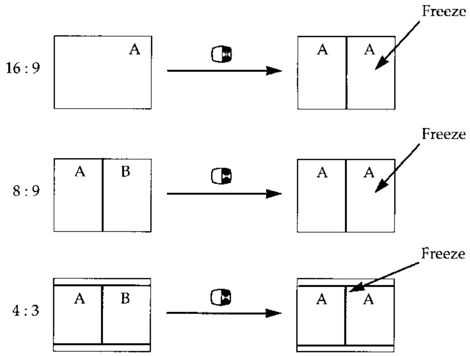


Swapping screens

Press ⬀/⇄ ⑩ once to swap the programmes of the main and sub screens.

Freezing the picture of the sub screen

Press ◨ ⑦ once to freeze the sub screen, twice to return to the normal live picture.



Teletext

Most TV channels broadcast information via teletext. The index page of the broadcaster (usually page 100) informs you about how to use the service. Make sure to use a TV channel with a strong signal, otherwise Teletext errors may occur.

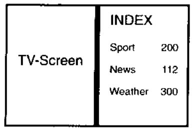
Direct Access Function

Switching Teletext on and off

1 Select the TV channel which carries the teletext service you want to view.

2 Press ⊜ ⑤ once for P&T (Picture and Teletext). The normal TV screen is displayed on the left, the Teletext screen on the right.
Press ⊜ ⑤ twice to get Teletext only.
Press ⊜ ⑤ three times for Mix mode. The normal TV screen and the Teletext screen are overlapped.

3 Press ▭ ⑥ to switch Teletext off.



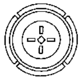
Selecting a Teletext page

Direct Page Selection
Use the number buttons ㉓ to input three digits of the page number.
If you have made a mistake: Type in any three digits, then reenter the correct page number.

Page Catching
1 Select a teletext page with page numbers (e.g. index page).

2 Press the joystick ⑰. »Page Catching« is displayed at the top of the page.
Push joystick ⑰ to blue or green to select the page you want. Press the joystick ⑰.
The requested page is displayed after some seconds.
Press ⊜ ⑤ to resume normal teletext reception.

Joystick



Accessing the next or preceding page

Press ⏶ ㉖ (Page +) or ⏷ (Page -).

Freezing a teletext subpage

Press ⊡ ⑳. The symbol ⊡ is displayed.
Press ⊜ ⑤ to resume normal teletext reception.

Revealing hidden information (e.g. for a quiz)

Press ⑲. Press again to cancel.

Using Fastext

(only available, if the TV station broadcasts Fastext signals)

With Fastext you can access pages with one key stroke. When Fastext is broadcast, a colour-coded menu appears at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue marks on the Remote Commander. Push the joystick ⑰ to the colour mark which corresponds to the colour-coded menu. The page is displayed after some seconds.

continued >>>>>>>>>

Using the Teletext Menu

Your TV is provided with a menu-guided teletext system. When teletext is switched on, you can use the buttons for menu operation to operate the teletext menu. *Select the teletext menu functions as follows:*

1 Press MENU ⑮. The menu is superimposed on the teletext display.

2 Push the joystick ⑰ to blue or green to select the teletext function you want. Push to yellow to confirm the selection.

USER PAGES/PRESET USER PAGES
See page 19 for information about presetting and operating the user pages.

INDEX
The index gives you an overview of the contents of the teletext you are using.

TOP/BOTTOM/FULL
For convenient reading of a teletext page you can enlarge the teletext page. After selecting the function, an information line »Top ↑ Bottom ↓ OK Full« is displayed. Push joystick ⑰ to green to enlarge the upper half, push to blue to enlarge the lower half. Press the joystick ⑰ to resume the normal display. Press ⊜ ⑤ to resume normal teletext reception.

TEXT CLEAR
After selecting the function, you can watch a TV programme while waiting for a requested teletext page to be captured. When the page is available, the symbol ⊜ changes colour. Press ⊜ ⑤ to view the requested page.

SUBTITLES
Check with your teletext service for information about subtitled TV programmes. After selecting the function the subtitles are displayed.

TIME PAGE
Check with your teletext service about the availability of time coded pages. If available, you can call up a page (e.g. an alarm page) at a certain time.

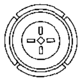
1 Select TIME PAGE in the teletext menu.
Push joystick ⑰ to yellow. An information window is displayed. Push to blue or green to select »On«. Push to yellow.

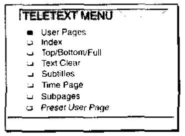
2 Use the number buttons ㉓ to enter the three digits of the page you want (e.g. 301). Push to yellow after each digit.

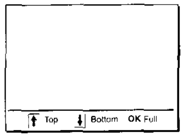
3 Use the number buttons ㉓ to enter the four digits of the desired time (e.g 18-54). Push to yellow after each digit. Press joystick ⑰ to confirm. Press MENU ⑮. The time is displayed in the top left-hand corner of the screen.
At the requested time the page is displayed.

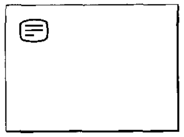
SUBPAGE
Using this function you can select a particular teletext page from several subpages (e.g. page 2 of 6 pages in total). After selecting the function an information line is displayed. Use the number buttons ㉓ to enter the four digits (e.g. enter 0002 for the second page of a sequence).
To cancel the request: Push joystick ⑰ to red and then to yellow.

Joystick









User Page Bank System

You can store up to 6 of your favourite teletext pages per Teletext service. In this way you have quick access to the pages you frequently use.

Storing pages

1 Press ⊜ ⑤ to switch Teletext on. Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select »Preset User Pages«. Push to yellow to confirm.

3 Push to blue or green to select the bank (from A to E) you want. Push to yellow to confirm.

4 Push to blue or green to select the three digits of your first favourite page. Push to yellow after each digit. Push to yellow to confirm.

5 Repeat step 4 for the other 5 favourite pages. If you do not want to preset all 6 page *numbers push to yellow without* inserting any number. After finishing the presetting, press the joystick ⑰.

6 Push to blue or green to select »Allocate Bank«. Push to yellow to confirm.

7 Push to blue or green to select the programme position of the channel which carries the teletext service for which you have selected your favourite pages. Push to yellow to confirm.

8 Push to blue or green to select the bank from step 3. Press *the joystick* ⑰ *to confirm.*

9 Repeat steps 3 to 8 for the other 4 banks available.

Displaying User Pages

1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select »User Pages«. Push to yellow to confirm.

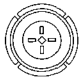
3 Push to blue or green to select the page you want. Press the joystick ⑰. The page is displayed after some seconds.

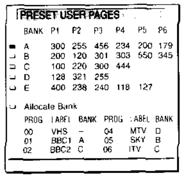
or

1 Press ⇔ ㉑.

2 Push joystick ⑰ to blue or green to select *the* page you want. *Press the joystick* ⑰. The page is displayed after some seconds.

Joystick

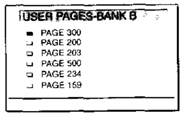



PRESET USER PAGES

	BANK	P1	P2	P3	P4	P5	P6
■	A	300	255	456	234	200	179
☐	B	200	120	301	303	550	345
☐	C	100	220	300	444		
☐	D	128	321	255			
☐	E	400	238	240	118	127	

☐ Allocate Bank

PROG	LABEL	BANK	PROG	LABEL	BANK
00	VHS	–	04	MTV	D
01	BBC1	A	05	SKY	B
02	BBC2	C	06	ITV	C



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Optional Equipment

Connecting Optional Equipment

You can connect a wide range of optional equipment to your TV. Refer to the illustrations on the back lap page of this Instruction Manual.

Symbol	Acceptable input signals	Available output signals
⇶1	Normal audio/video and RGB	Audio/video from TV tuner
⇆2/⇥Ⓢ2	Normal audio/video and S video	Audio/video from selected source
⇥3, ⇥3	Normal audio/video and S video	No output
↦	No inputs	Audio from selected source

About S video input
Video signals may be separated into Y (luminance) and C (chrominance) signals. Separating the two signals prevents interference and thus improves the picture quality.

Tips:
- If the picture or sound is distorted, move the VCR away from the TV.
- When connecting a monaural VCR, connect only the white jack to both the TV and VCR.

Selecting Input and Output Signals

a) Direct Access Buttons

Selecting the Input
Press ⇥ ⓴ 🅴 repeatedly to select one of the following input modes:

Symbol on the screen	Input signals	
⇥1	Audio/video through Euro AV connector	🅹
⇶	RGB through Euro AV connector	🅹
⇥2	Audio/video through Euro AV connector	🅻
⇥Ⓢ2	S video through Euro AV connector	🅻
⇥3	Audio/video through the phono jacks	🅲
⇥Ⓢ3	S video through the 4 pin DIN	🅱

Press ▭ ❻ to restore the normal TV picture.

Selecting the Output from Euro AV connector ⇆2/⇥Ⓢ2 🅻
Press ↦ ⓳ repeatedly to select one of the following output sources for the connector ⇆2/⇥Ⓢ2 🅻:

Symbol on the screen	⇆2/⇥Ⓢ2 🅻 connector output signal	
1 ↦	Audio/video from Euro AV connector	🅹
2 ↦	Audio/video from Euro AV connector	🅻
2 Ⓢ↦	Audio/video from Euro AV connector	🅻
3 ↦	Audio/video from the phono jacks	🅲
3 Ⓢ↦	Audio/video from the 4 pin DIN	🅱
TV	Audio/video from the aerial terminal ⊤	🅺

b) Using the Menu »Video Connection«

1 Press MENU ⓯.

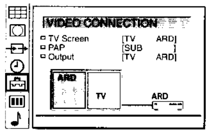
2 Push joystick ⓱ to blue or green to select the symbol ⇹ on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »TV screen« (input source for TV-screen), PAP (source for PAP sub screen), or »Output« (output source for ⇆2/⇥Ⓢ2🅻). Push to yellow to confirm.
You can select between the following sources:
• TV: TV-tuner • YC: S video signal • AV: Audio/Video • Sub: 2nd TV-tuner

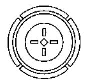
TV screen:	TV, AV1, RGB, AV2, YC2, AV3, YC3
PAP:	Sub, AV1, AV2, YC2, AV3, YC3
Output:	TV, AV1, AV2, YC2, AV3, YC3

4 Push to blue or green to select the desired source. Press joystick ⓱ to store.

5 Press MENU ⓯ to restore the normal TV picture.



Joystick



Remote Control of other Sony Equipment

Using the buttons ❷ on the Remote Commander you can control other Sony equipment.

1 Set the selector VTR 1 2 3 MDP according to the equipment you want to control.

VTR 1:	Beta VCR
VTR 2:	8mm VCR
VTR3:	VHS VCR
MDP:	Video Disk Player

2 Use the buttons ❷ on the Remote Commander to operate the equipment.

Tips
- If your video equipment has a COMMAND MODE selector, set this selector to the same position as the VTR 1 2 3 MDP selector on the TV Remote Commander.
- If the equipment does not have a certain function, the corresponding button on the Remote Commander does not work.

Additional Information

Troubleshooting

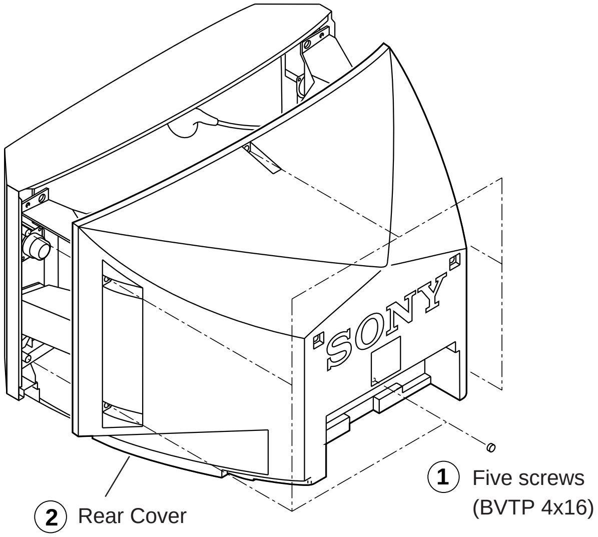
Here are some simple solutions to problems which may affect the picture and sound.

Problem	Solution
No picture (screen is dark), no sound	• Plug the TV in. • Press ⏻ 🅸 on the TV. (If ⏻ indicator 🅷 is on, press ▭ ❻ or a programme number ㉓ on the Remote Commander.) • Check the aerial connection. • Check if the selected video source is on. • Turn the TV off for 3 or 4 seconds and then turn it on again using ⏻🅸.
Poor or no picture (screen is dark), but good sound	• Press ⬬ ㉕ to enter the PICTURE CONTROL menu and adjust »Brightness«, »Contrast« and »Colour«.
Poor picture quality when watching an RGB video source	• Press ⇥ ⓴ repeatedly to select ⇶.
Good picture but poor or no sound	• Press ◿ +⓰. • If 🔇 is displayed on the screen, press 🔇❶. • Check the connections of the loudspeakers.
No colour for colour programmes	• Press ⬬ ㉕ to enter the PICTURE CONTROL menu, select RESET, then press joystick ⓱.
Remote Commander does not function.	• Replace batteries.

If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.

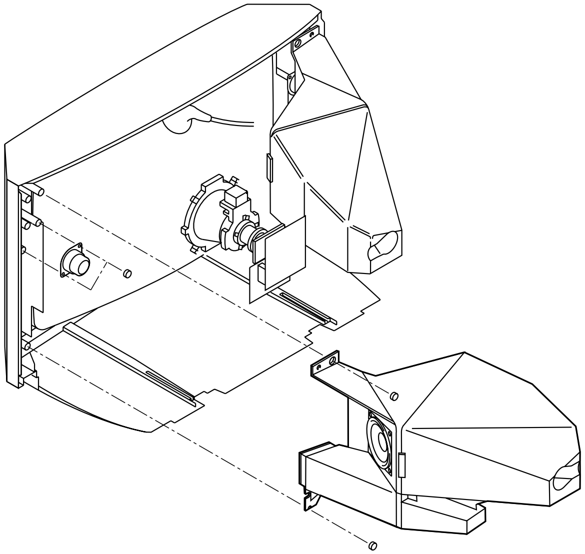
SECTION 2
DISASSEMBLY

2-1. REAR COVER REMOVAL

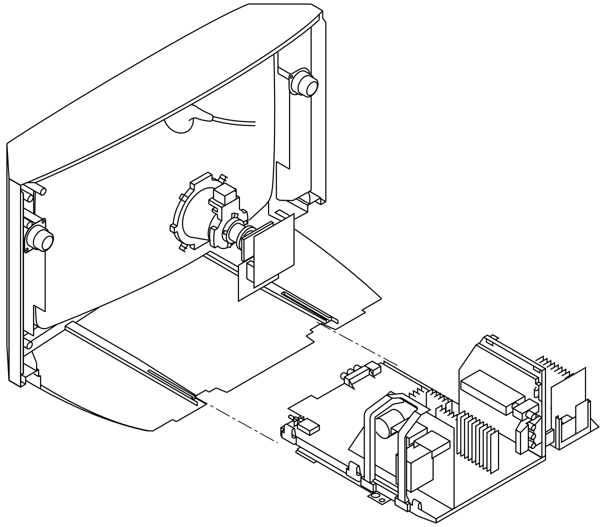


SONY
① Five screws
(BVTP 4x16)
② Rear Cover

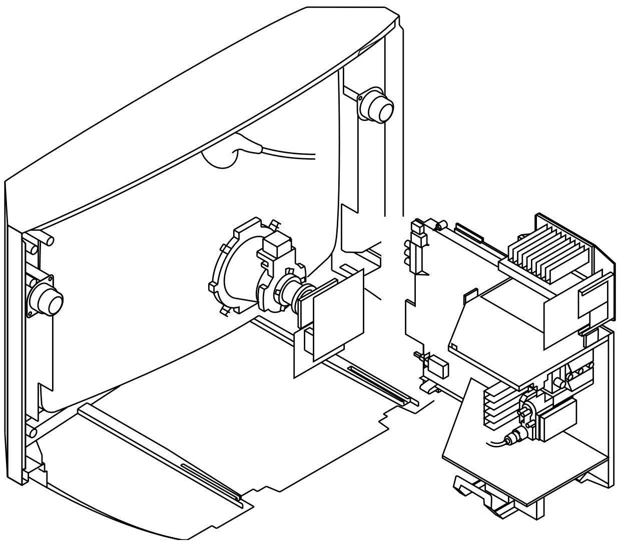
2-2. SPEAKER REMOVAL



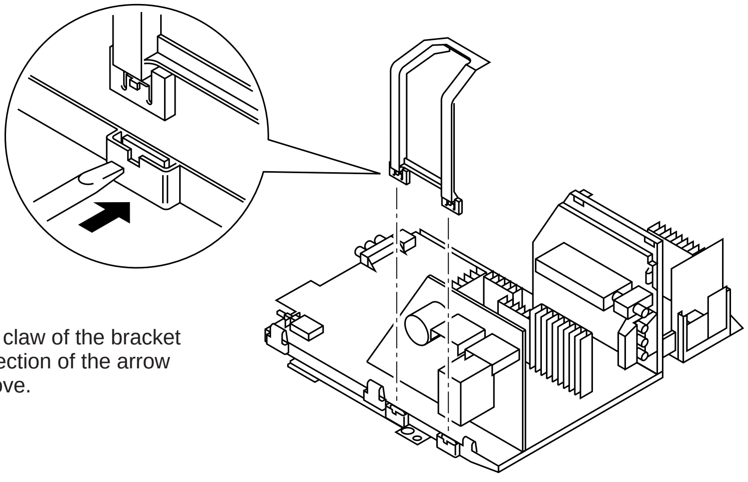
2-3. CHASSIS ASSY REMOVAL



2-4. SERIVCE POSITION

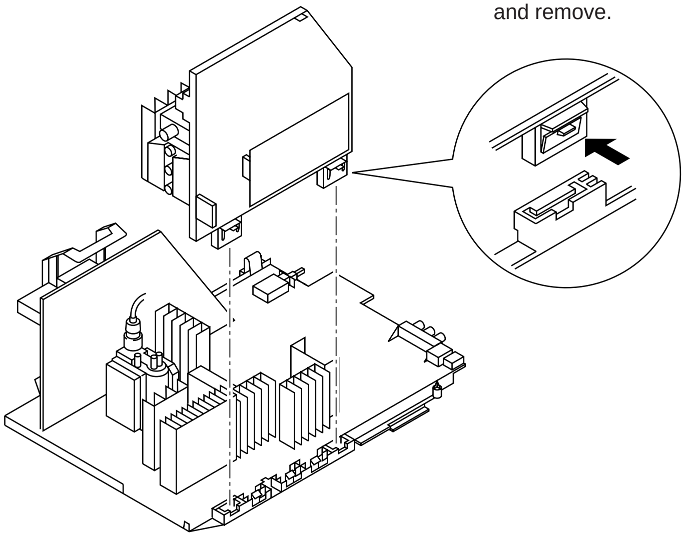


2-5. G BOARD REMOVAL



Push the claw of the bracket
in the direction of the arrow
and remove.

2-6. A BOARD REMOVAL

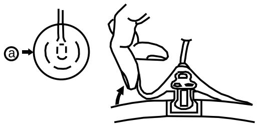


Push the claw of the bracket
in the direction of the arrow
and remove.

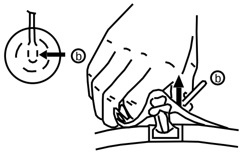
• REMOVAL OF ANODE-CAP

Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

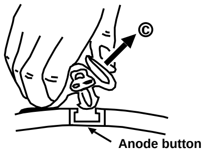
*** REMOVING PROCEDURES.**



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ


c
Anode button

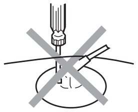
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ

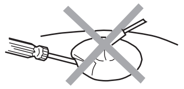
• HOW TO HANDLE AN ANODE-CAP

① Don't damage the surface of anode-cap with sharp shaped material !

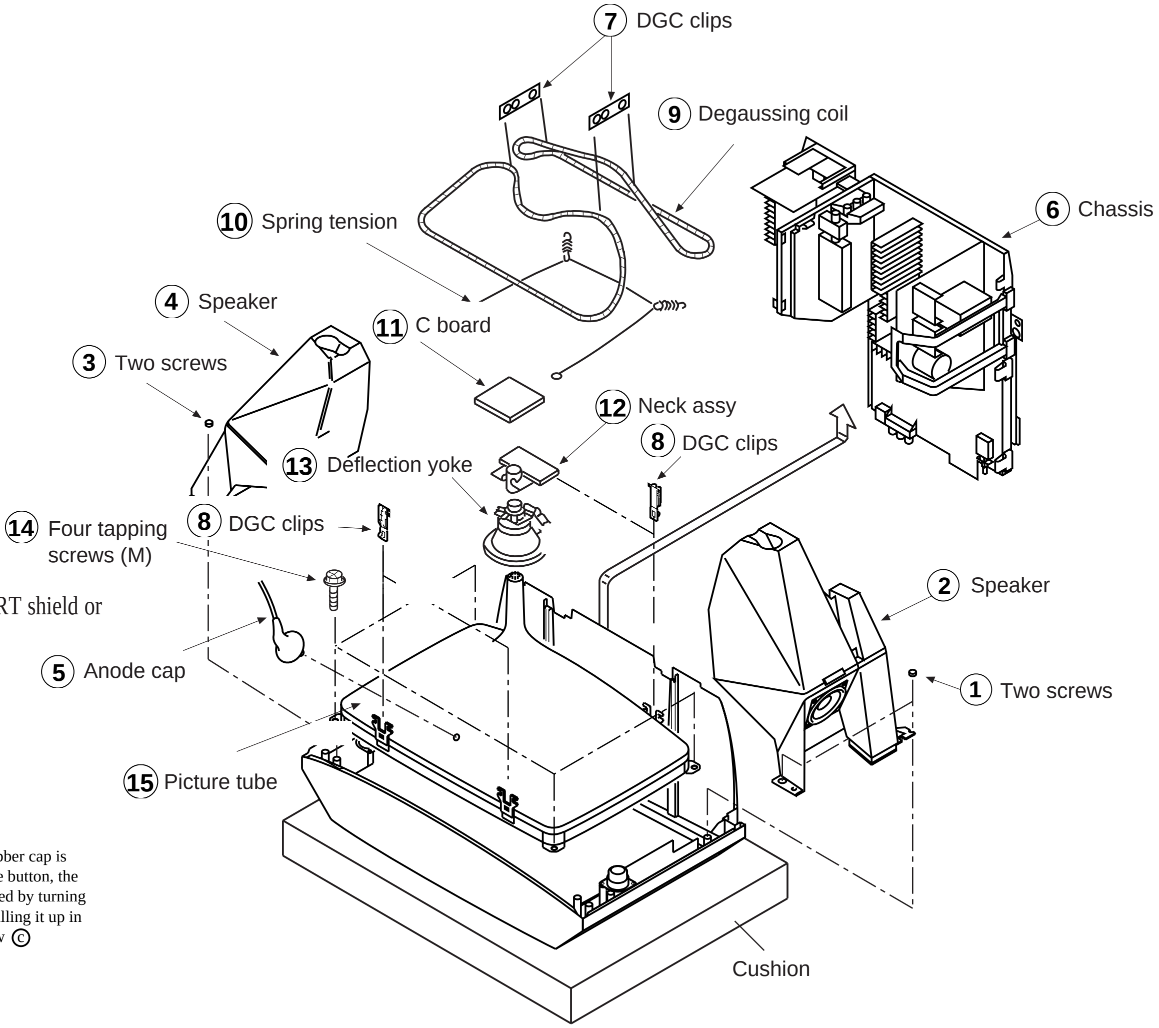
② Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built into the rubber.

③ Don’t turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or damage the rubber.





2-7. PICUTRE TUBE REMOVAL


⑦ DGC clips
⑨ Degaussing coil
⑩ Spring tension
⑥ Chassis
④ Speaker
⑪ C board
③ Two screws
⑫ Neck assy
⑧ DGC clips
⑬ Deflection yoke
⑭ Four tapping screws (M)
⑧ DGC clips
② Speaker
⑤ Anode cap
① Two screws
⑮ Picture tube
Cushion

REMOVAL AND REPLACEMENT OF THE MAIN-BRACKET BOTTOM PLATES.

⚠ For safety reasons, on no account should the plates be removed and not refitted after servicing.

(1) REMOVING THE PLATES

In the event of servicing being required to the solder side of the D Board printed circuit, the bottom plates fitted to the main chassis bracket require to be removed. This is performed by cutting the gates with a sharp wire cutter at the locations shown and indicated by arrows.

Note : There are 5 plates fitted to the main bracket and secured by 4 or 6 gates. Only remove the necessary plate to gain access to the circuit board.

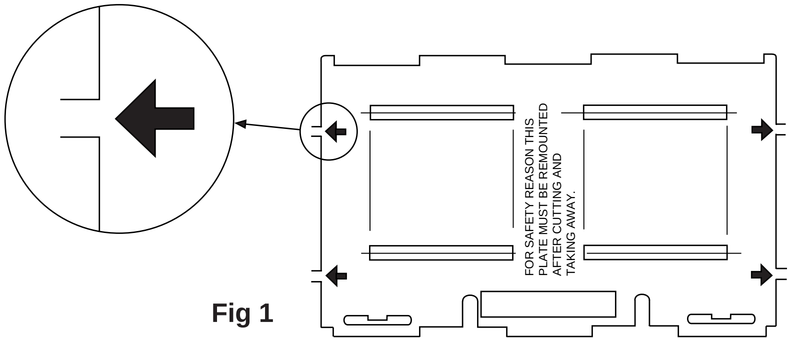

FOR SAFETY REASON THIS
PLATE MUST BE REMOUNTED
AFTER CUTTING AND
TAKING AWAY.

Fig 1

(2) REFITTING THE PLATES

Because the plates differ in size it is important that the correct plates are refitted in their original location.
The plates are identified by markings A-B-C-D-E on their top side.

1. Identify the plate by locating its marking.
2. Turn the plate over noting where the marking is located.
3. Locate the corresponding marking indicated on the main chassis bracket. See Fig 2.
4. Refit the plate as indicated in Fig 3 with the markings located next to each other.

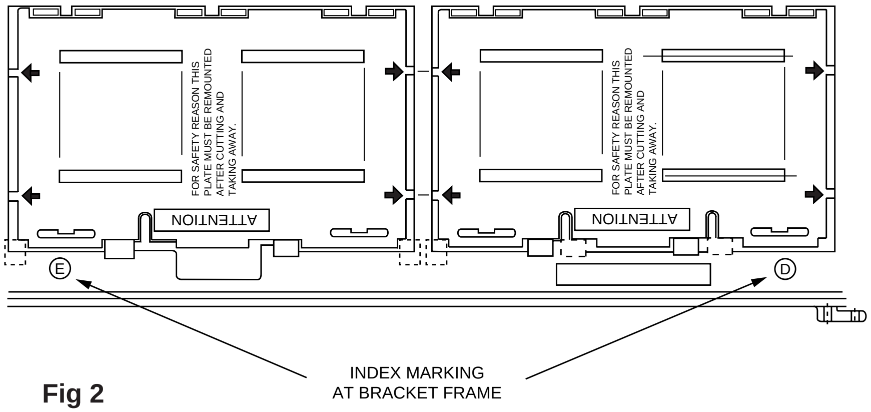

FOR SAFETY REASON THIS
PLATE MUST BE REMOUNTED
AFTER CUTTING AND
TAKING AWAY.
ATTENTION
FOR SAFETY REASON THIS
PLATE MUST BE REMOUNTED
AFTER CUTTING AND
TAKING AWAY.
ATTENTION
E
D
INDEX MARKING
AT BRACKET FRAME

Fig 2

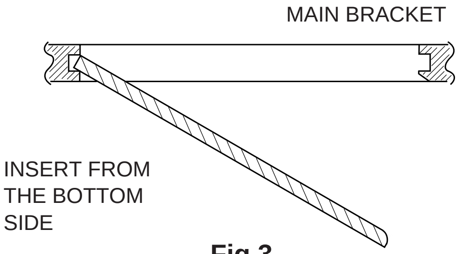

MAIN BRACKET
INSERT FROM
THE BOTTOM
SIDE

Fig 3

In the event of the plates requiring to be removed at a later stage, this can be achieved by inserting a screwdriver in the snap-recess indicated as in Fig 4 and lifting out.

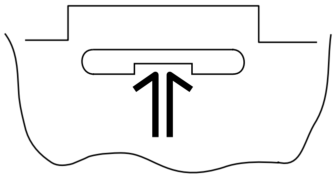


Fig 4

SECTION 3

SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustment with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches as follows.

Contrast .... normal
Brightness .... normal

- Carry out the following adjustments in this order:

3-1. Beam landing
3-2. Convergence
3-3. Focus
3-4. White balance

Note: Testing equipment required.
1. Color bar/pattern generator
2. Degausser
3. Vector scope

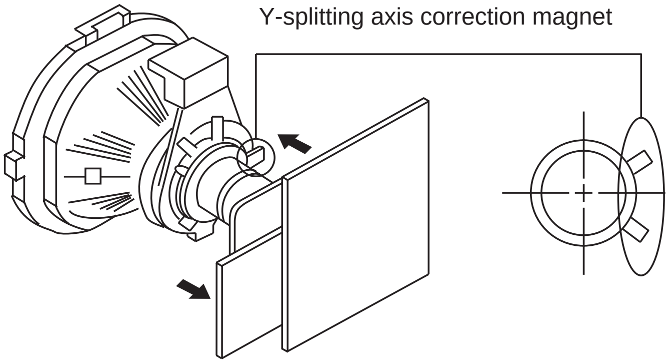
3-1. BEAM LANDING

Preparation:

1. In order to reduce the influence of geomagnetism on the set's picture tube face it in an easterly or westerly direction.
2. Switch on the set's power and degauss with the degausser.

(1) Adjustment of Correction Magnet for Y-Splitting Axis

1. Input a crosshatch signal from the pattern generator.
2. Picture control is minimum and brightness control is still normal.
3. Position the neck assy as shown in Fig. 3-2.
4. Move the deflection yoke forward to touch the CRT and it stands up rightly.
5. Adjust the upper pin and the lower pin symmetrically by opening or closing the Y-splitting axis correction magnets on the neck assy.
6. Return the deflection yoke to its original position.



(2) Landing

Note: Before carrying out the following adjustments adjust the magnets as indicated below (See Fig.3-3).

1. Input an all-white signal from the pattern generator. Maximize the picture setting and adjust the brightness setting.
2. Rough-adjust the focus and horizontal convergence.
3. Loosen the deflection yoke screws, align the purity adjustment knob to the central position. (See Fig. 3-1)
4. Switch from the all-white pattern to an all-green pattern.
5. Move the deflection yoke backwards and adjust with the purity magnet so that the green is at the center and it aligns symmetrically. (See Fig. 3-4)
6. Move the deflection yoke forward and adjust so that entire screen becomes green.
7. Switch the raster signal to red, then to blue and verify the landing condition.
8. When the position of the deflection yoke has been determined, fasten the deflection yoke with the screw.
9. If the beam does not land correctly in all the corners, use magnets to correct it. (See Fig. 3-5)

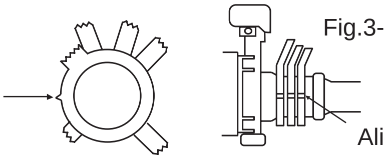


Fig.3-3

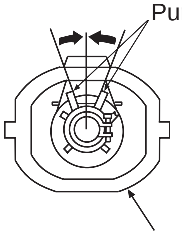
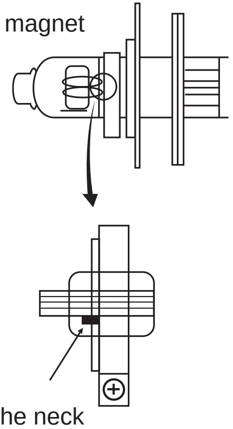


Fig.3-1



Align the bottom edge of the neck assy with the G3 hole center.

Fig.3-2

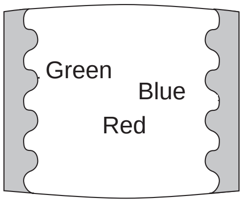

Green
Blue
Red

Fig.3-4

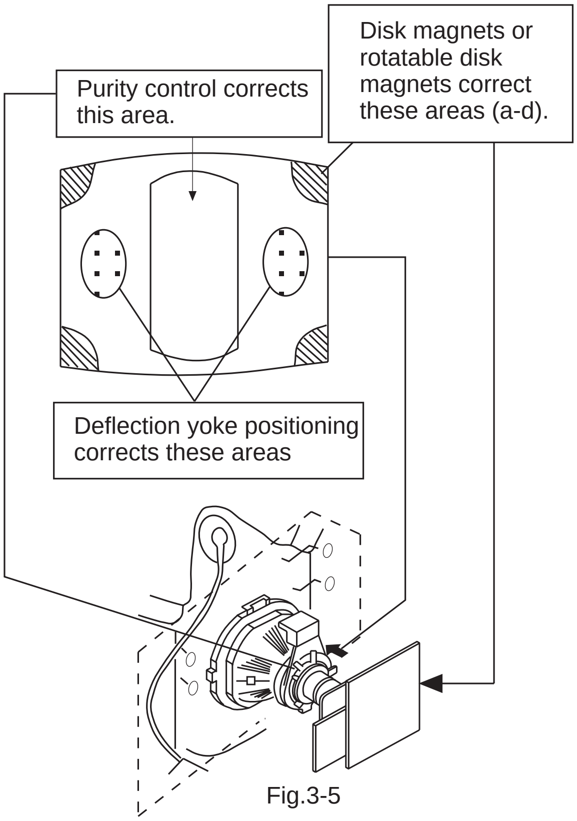
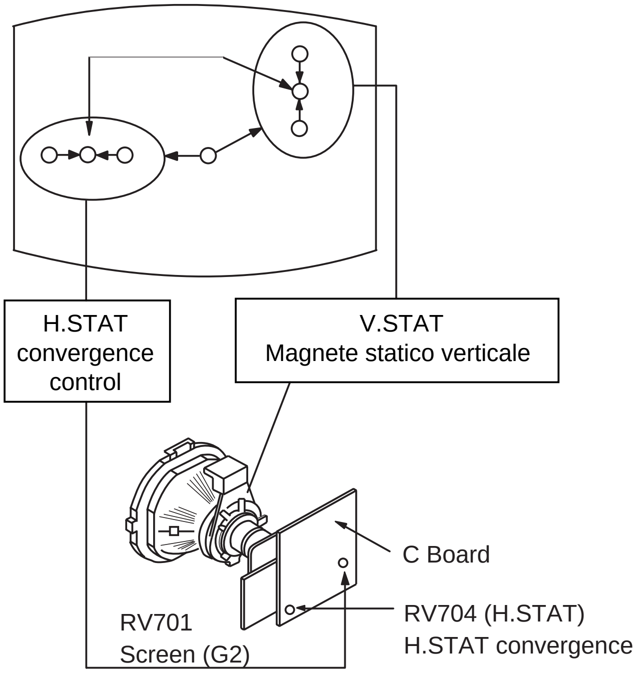

Purity control corrects this area.
Disk magnets or rotatable disk magnets correct these areas (a-d).
Deflection yoke positioning corrects these areas

Fig.3-5

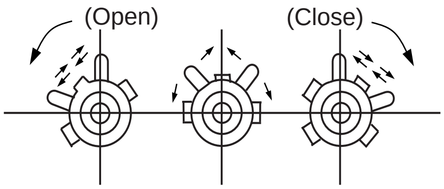
3-2. CONVERGENCE

(1) Screen center convergence (Static convergence)

1. Input a dot signal from the pattern generator. Normalize the picture setting.
2. (Moving horizontally), adjust the H.STAT control so that the horizontal red, green and blue dots coincide at the center of screen.
3. (Moving vertically), adjust the V.STAT magnet so that the vertical red, green and blue points coincide at the center of screen.

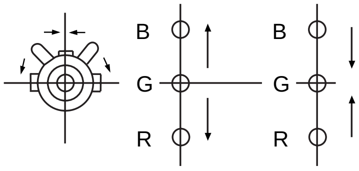

H.STAT convergence control
V.STAT Magnete statico verticale
C Board
RV701 Screen (G2)
RV704 (H.STAT) H.STAT convergence

- If the horizontal dots are unable to coincide with the variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking. (Adjust the convergence by tilting the V.STAT convergence or by opening or closing the V.STAT convergence.)

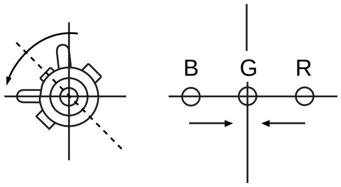


4. Movement of the red, green and blue dots by tilting the V.STAT magnet and by opening or closing the V.STAT magnet.

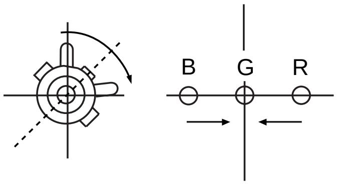
①By opening or closing the V.STAT magnet, the red, green and blue points move as shown below



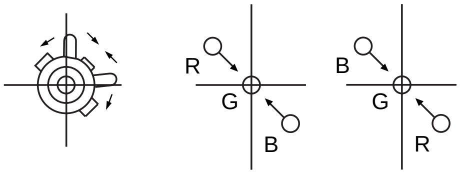
②By rotating the V. STAT magnet counterclockwise, the red, green and blue dots move as shown below.



③ By rotating the V.STAT magnet clockwise, the red, green and blue dots move as shown below.



④ By opening or closing the V.STAT magnet, the red, green and blue dots move as shown below.

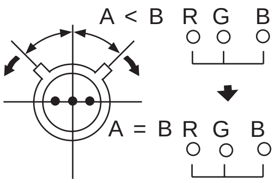


- If the blue dot does not coincide with the red and green points, correct the points by using the BMC (Hexapole) magnet.

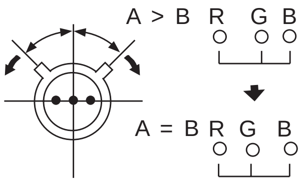
⑤ Correction for HMC (horizontal mis-convergence) and VMC (vertical mis-convergence) by using the BMC (Hexapole) magnet.

① HMC correction by BMC (Hexapole) magnet and movement of the electronic beam.

HMC correction(A)

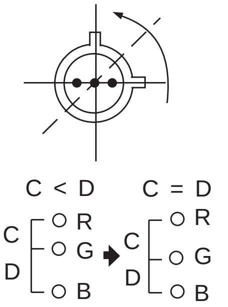

A < B R G B
A = B R G B

HMC correction(B)

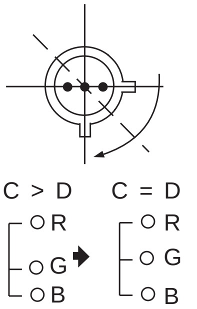

A > B R G B
A = B R G B

② VMC correction by BMC (Hexapole) magnet and movement of the electronic beam.

VMC correction(A)


C < D
C = D
C
D
R
G
B
C
D
R
G
B

VMC correction(B)


C > D
C = D
R
G
B
R
G
B

Layout of each control

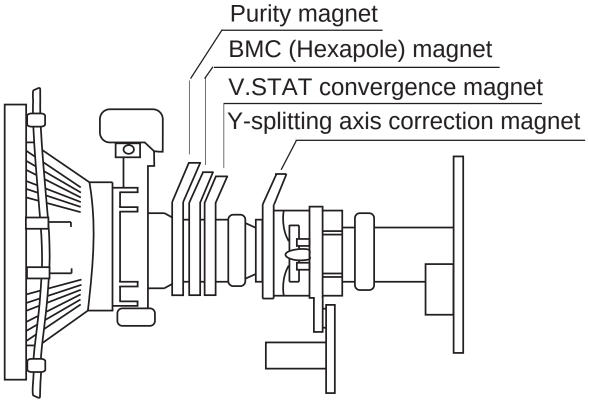
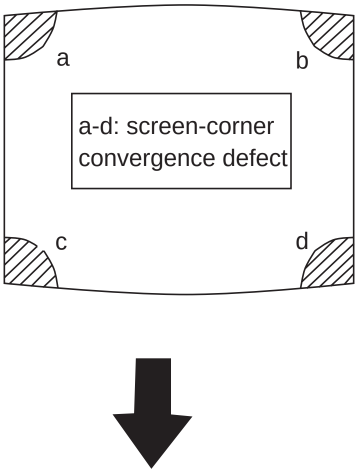
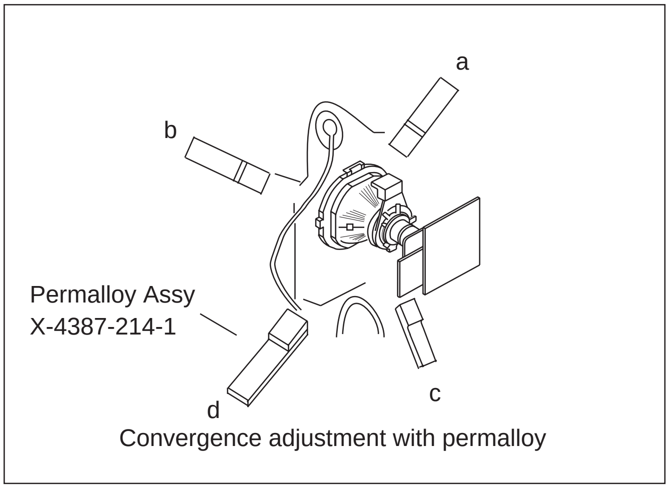

Purity magnet
BMC (Hexapole) magnet
V.STAT convergence magnet
Y-splitting axis correction magnet

Fig.3-5

2. If you are unable to adjust the corner convergence properly, correct them with the use of permalloys.

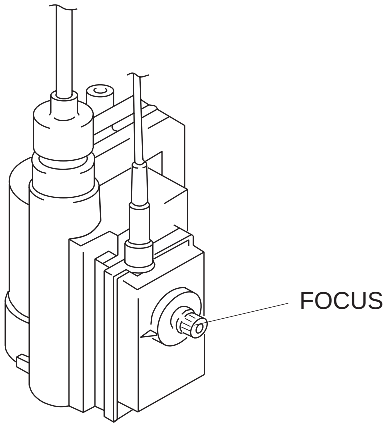

a
b
a-d: screen-corner convergence defect
c
d


a
b
Permalloy Assy
X-4387-214-1
d
c

Convergence adjustment with permalloy

3-3. Focus

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control on the flyback transformer for the best focus at the center of the screen.
   Bring only the center area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



3-4. Screen (G2), White balance (Adjustment in the service mode with remote commander)

G2 adjustment (RV701)

1. Input a dot signal from the pattern generator.
2. Set the Picture, Brightness and Colour to minimum.
3. Apply 170V DC from an external power supply to the R, G and B cathodes of the CRT.
4. While watching the picture, adjust the G2 control RV701 [SCREEN] on the C board to the point just before the return lines disappear.

White balance adjustment

1. Receive an all-white signal.
2. Enter into the Service Mode by pressing ' TEST ', ' TEST ' and ' MENU' on the Service Commander.
3. Select ' VIDEO PROC. ' from the on screen menu display and press OK .
4. The ' VIDEO PROC TDA4780' menu will appear on the screen.

Video Proc. TDA4780

Item No	Adjustment item	Data Amount
1	BRT	USER CONTROL
2	COL	USER CONTROL
3	PIC	USER CONTROL
4	HUE	USER CONTROL
5	R GAIN	31
6	G GAIN	Adj
7	B GAIN	Adj
8	R LVL REF	31
9	G LVL REF	Adj
10	B LVL REF	Adj
11	PEAK DRV LIMIT	63
12	GAMMA	31
13	SCP ON = 3LEV OFF = 2LEV	ON
14	DELAY	OFF

5. Set picture to MAX.
6. Set the ' R GAIN ' to 25.
7. Adjust the ' G GAIN ' and ' B GAIN ' so that the white balance becomes optimum.
8. Press the OK button to write the data for each item.
9. Set picture to MIN.
10. Set the ' R LVL REF ' to 31.
11. Adjust ' G LVL REF ', and ' B LVL REF ' with the left and right buttons so that the white balance becomes optimum.
12. Press the OK button to write the data for each item.

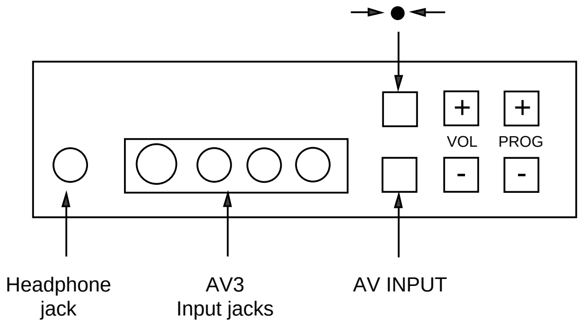
SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander, RM-862.

HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set while pressing the PROG + (plus) and PROG - (minus) buttons on the front panel.



2. “TT” will appear on the upper right corner of the screen.
3. Press " MENU " on the commander to get the service menu on screen.

DEVICES	
Init TV	
Pip, Lumisponder & Autoside	
Sub Adjust	
Video Proc	TDA4780
Col Dec Main	TDA9144
Deflect. Cont	SDA9361
Col Dec Sub	TDA9143
Feature Box	S87C654
AI	TDA9170
DA	SDA9280
Single PIP	SDA9288
Sound	
Line23 det	

4. Push the joystick up (green) or down (blue) on the remote commander to select the adjustment item.
5. Press the center button to proceed to the next menu.
6. If the adjustment item is 'Video Proc.', push the down button to move to 'Video Proc.'.
7. The Menu as indicated in Fig 4-3 will appear on the screen.

8. Move the joystick up or down to move to the adjustment item and press the center (OK) button.
9. Change the data in order to comply with each standard.

Item No	Adjustment item	Data Amount
1	BRT	USER CONTROL
2	COL	USER CONTROL
3	PIC	USER CONTROL
4	HUE	USER CONTROL
5	R GAIN	31
6	G GAIN	Adj
7	B GAIN	Adj
8	R LVL REF	31
9	G LVL REF	Adj
10	B LVL REF	Adj
11	PEAK DRV LIMIT	63
12	GAMMA	31
13	SCP ON = 3LEV OFF = 2LEV	ON
14	DELAY	OFF
15	DATA BUFF	OFF
16	NTSC MATRIX	OFF
17	HDTV	OFF
18	FSBL	OFF
19	AUTO CUT OFF	ON
20	FSW 2 DIS	OFF
21	FSW 2	OFF
22	FSW 1 DIS	OFF
23	FSW 1	OFF
24	ADAPT BLACK	OFF
25	Y HIGH 1V	OFF
26	MOD2	OFF
27	BLUE STRETCH	OFF
28	VM OUT	OFF
29	PEAK DRV ABS	ON
30	TIME CNST PEAK LIMIT	OFF

Fig. 4-3

SDA9361 (VIDEO PROC.)

Item No	Adjustment item	Data Amount
1	HDE	ON
2	VR	0
3	RABL	ON
4	BLK DIS	OFF
5	2FH 2*LINE FRQ	ON
6	STANDBY MODE	OFF
7	VERTICAL	ON
8	BSE BLK SELECT	OFF
9	SSE START SCAN	OFF
10	SRSE START RED SCAN	OFF
11	GBE GUARD BAND	OFF
12	STE SCAN TIME TABLE	OFF
13	NSA SELF ADAPTION	ON
14	V SHIFT	ADJ
15	V SIZE	ADJ
16	V LIN	ADJ
17	V S-COR	ADJ
18	V EHT COMP	25" = 78 29" = 100 28" = 36 32" =
19	H SIZE	ADJ
20	PIN PHASE	ADJ
21	PIN AMP	ADJ
22	UP COR PIN	ADJ
23	LOW COR PIN	ADJ
24	H EHT COMP	25" = 78 29" = 100 28" = 36 32" =
25	H SHIFT	ADJ
26	V ANGLE	ADJ
27	V BOW	ADJ
28	PWM START	0

Item No	Adjustment item	Data Amount
29	D/A	0
30	V BLK TIME	0
31	H BLK TIME	0
32	STAR V SCAN	0
33	H BLK PHASE	0
34	V SCAN WIDTH 0	0
35	V SCAN WIDTH 1	0
36	GUARD BAND	0
37	START RED SCAN	0
38	NUMBER FIELDS	1
39	NI NON INTERLACE	OFF
40	NR VSYNC NOISE RED	ON
41	SCC WITH VBL	ON
42	MIN LINES/FIELD	0
43	MAX LINES/FIELD	0
44	AFC EHT COMP	0
45	PLL FREQ	6
46	VCR	ON
47	GEN MOD	OFF
48	HSWID	ON
49	INT H PHASE	239
50	PWM WIDTH	0
51	NOISY VCR	OFF
52	KILLZIP	OFF
53	TC3RD	OFF
54	BANDGAP 4 OFF	OFF
55	BANDGAP OFF	OFF
56	BANDGAP	0

TDA4780 (VIDEO PROC.)

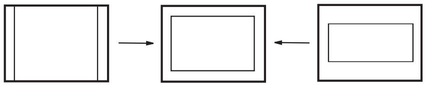
Item No	Adjustment item	Data Amount
1	BRT	USER CONTROL
2	COL	USER CONTROL
3	PIC	USER CONTROL
4	HUE	USER CONTROL
5	R GAIN	25
6	G GAIN	Adj
7	B GAIN	Adj
8	R LVL REF	31
9	G LVL REF	Adj
10	B LVL REF	Adj
11	PEAK DRV LIMIT	0
12	GAMMA	31
13	SCP ON = 3LEV OFF = 2LEV	ON
14	DELAY	OFF
15	DATA BUFF	OFF
16	NTSC MATRIX	OFF
17	HDTV	OFF
18	FSBL	OFF
19	AUTO CUT OFF	ON
20	FSW 2 DIS	OFF
21	FSW 2	OFF
22	FSW 1	OFF
23	FSW 1	OFF
24	ADAPT BLACK	OFF
25	Y HIGH 1V	OFF
26	MOD2	OFF
27	BLUE STRETCH	OFF
28	VM OUT	OFF
29	PEAK DRV ABS	ON
30	TIME CNST PEAK LIMIT	OFF

DEFLECTION SYSTEM ADJUSTMENT

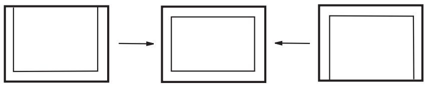
1. Enter into the service mode and select 'Deflect cont.'.The 'Deflect cont. SDA9361' adjustment menu will be displayed.
2. Select and adjust each item in order to get an optimum image.

Item No	Adjustment item	Data Amount
1	HDE	ON
2	VR	0
3	RABL	ON
4	BLK DIS	OFF
5	2FH 2*LINE FRQ	ON
6	STANDBY MODE	OFF
7	VERTICAL	ON
8	BSE BLK SELECT	OFF
9	SSE START SCAN	OFF
10	SRSE START RED SCAN	OFF
11	GBE GUARD BAND	OFF
12	STE SCAN TIME TABLE	OFF
13	NSA SELF ADAPTION	ON
14	V SHIFT	ADJ
15	V SIZE	ADJ
16	V LIN	ADJ
17	V S-COR	ADJ
18	V EHT COMP	25" = 78 29" = 100 28" = 36
19	H SIZE	ADJ
20	PIN PHASE	ADJ
21	PIN AMP	ADJ
22	UP COR PIN	ADJ
23	LOW COR PIN	ADJ
24	H EHT COMP	25" = 78 29" = 100 28" = 36
25	H SHIFT	ADJ
26	V ANGLE	ADJ
27	V BOW	ADJ
28	PWM START	0

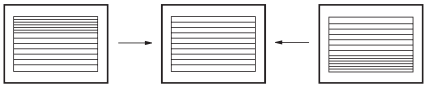
V SIZE



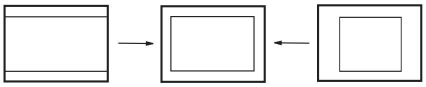
V POS



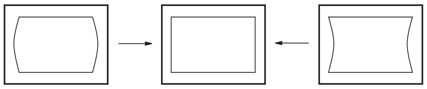
V LIN



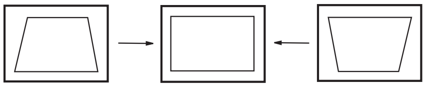
H SIZE



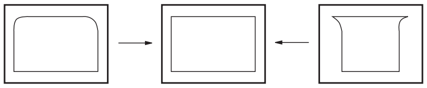
H PIN CUSH



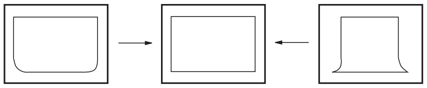
H TILT



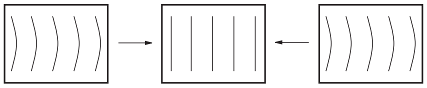
H UP COR



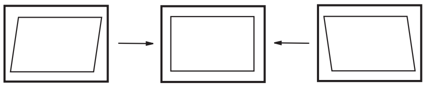
H LOWER COR



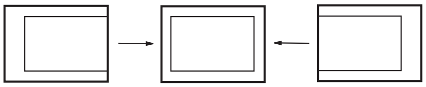
AFC V BOW



AFC V ANGLE



H POS



4-2. VOLUME ELECTRICAL ADJUSTMENTS

Sub Brightness Adjustment

1. Enter Service Mode (Device Menu).
2. Select 'SUB ADJUST MENU'.

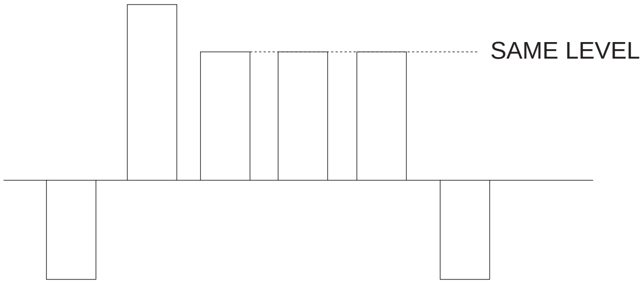
Sub adjustment

Sub Picture
Sub Color
Sub Brightness
4/3 Center
PAP H-Center
PAP HWE-Offset

3. Adjust the value according to the following advice.

Sub Color Adjustment

1. Input a PAL color bar signal.
2. Connect an oscilloscope to CN3703.
3. Enter into 'SERVICE MODE'.
4. Choose 'SUB ADJUST'.
5. Enter into Sub Color mode.
6. Adjust data so that the right sides of the waveforms are of equal height.



4-3. TEST MODE 2:

Is available by pressing the Test button twice, OSD “TT” appears. The functions described below are available by pressing the two numbers. To release Test Mode 2, press 0, 10, 20 ... twice or switch the TV into Standby Mode. Pressing the two Local Control buttons (+ and –) during Power ON will also switch into "TT" mode.

In TT mode, it is possible to remove the Menu from the screen by pressing the Speaker Off button once. Pressing the Speaker OFF button a second time will cause the menu to reappear . The Function is kept even when the menu is not displayed!!

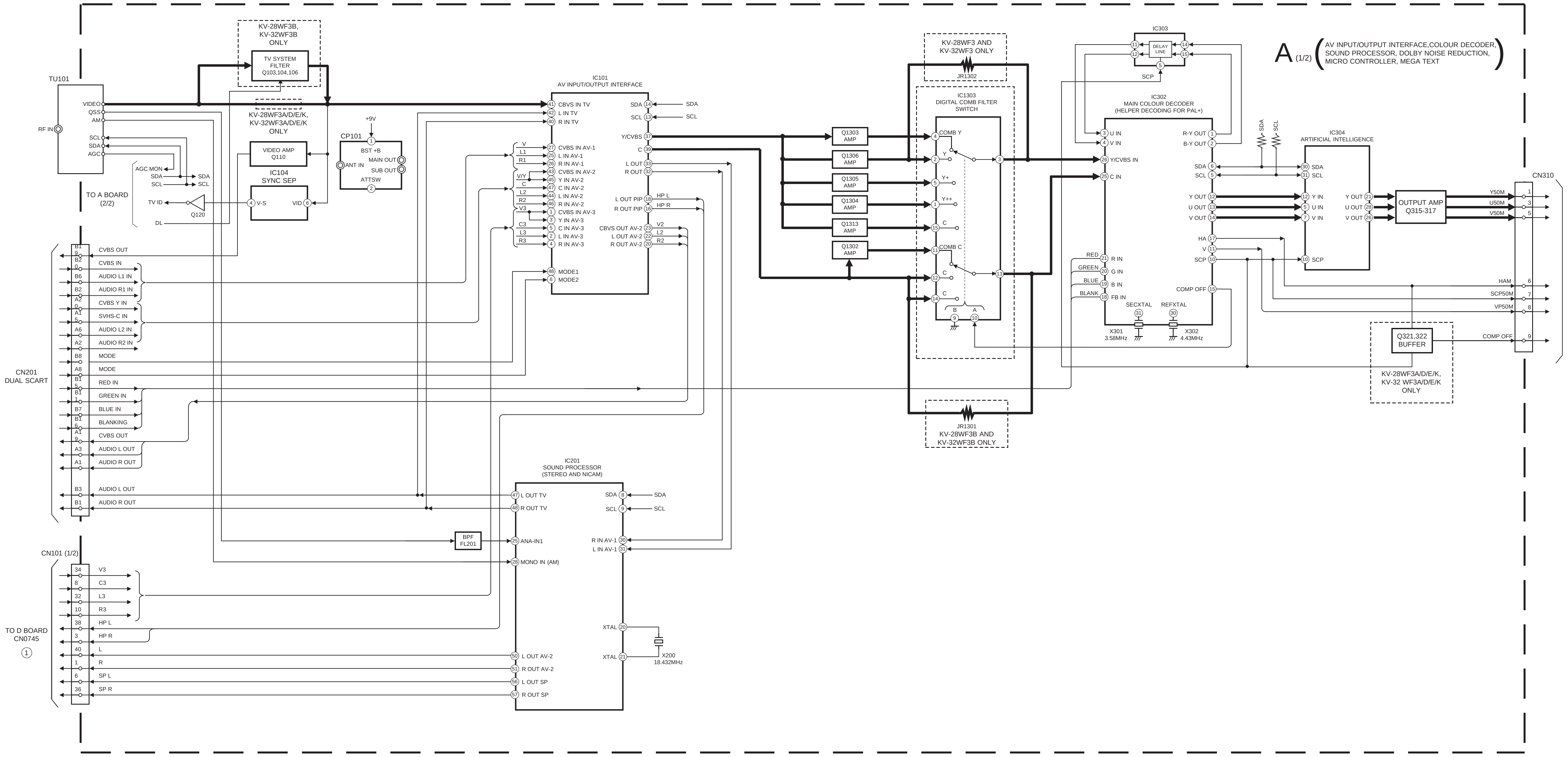
00	Switch back to normal mode - TT mode off
01	Switch service menu on
02	Direct access to Noise reduction
03	Set volume to 30%
04	Service menu in "Service Mode"
05	Service menu in "Production Mode"
06	Set Volume to 80%
07	Aging Mode
08	Shipping Condition
09	Language Reset
10	The TT number will be deleted
11	Direct access to Balance
12	Direct access to Hue
13	Display of TV set configuration
14	Production Info Display
15	Read Analog from ROM
16	Save Analog F in NVM
17	This function presets the Labels for the AV sources: AV1, RGB, AV2, YC2, AV3, YC3, AV4, YC4.
18	No function
19	No function
20	See TT10
21	Picture Rotation automatic function: (-4) -> (+4) -> 0
22	Error Monitor Display
23	Direct access to Sub Brightness Adjustment.
24	Direct access to Sub Colour.
25	Status Menu Display
26	Text Character selection (Char set 06 -> West Europe)
27	Text Character selection (Char set 38 -> East Europe)
28	Text Character selection (Char set 40 -> West Europe) US English
29	Text Character selection (Char set55 -> West Europe) Turkish
30	See TT10

31	no function
32	no function
33	no function
34	no function
35	no function
36	no function
37	no function
38	Screen Position
39	Reset Programme Table
40	See TT10
41	Picture Min
42	no function
43	no function
44	no function
45	Set NVM to Protect mode
46	IR Channel Pressetting Mode. The channel pressetting can be done by a Special transmitter. Sequence: TT46 -> --PR Number select display appears Select Prog. No. from where the channel shall be stored. --> Now TV is waiting for IR sequence <-- --> If no IR transmission starts TT46 is released after 20 secs <--! Note: when TT46 is active, any transmission will be interpreted as PROG data !
47	no function
48	no function
49	New Initialize
50	See TT10
51	Strobo mode is activated.
52	no function
53	no function
54	Direct access to Velocity Modulation VM (Production use)
55	Slicer High
56	Slicer No
57	Megatext Service Menu on
58	MTX Small Framing Code Window

59	MTX Wide Framing Code Window
60	See TT10
61	no function
62	no function
63	no function
64	Reset all IIC Slave commands (Production use)
65	Reset stored error codes in NVM
66	Feature box and Pal Plus
67	no function
68	Ignore Errors - on
69	Ignore errors - off
70	See TT10
71	no function
72	no function
73	Megatext RGB textlevel one step decreased.
74	Megatext RGB textlevel one step decreased (max 1 steps down starting from E0h) (Production use)
75	no function
76	SDA9361
77	SDA9280
78	PIP
79	no function
80	See TT10
81	S87C654 Default data setting
82	TDA9170 Default data setting
83	SAA 7185WP Default data setting
84	TDA4780 Default data setting
85	TDA9144 Default data setting
86	TDA9143 Default data setting
87	SDA9288 Default data setting
88	Char set Russian
89	Char set Russian (esc)
90	See TT10

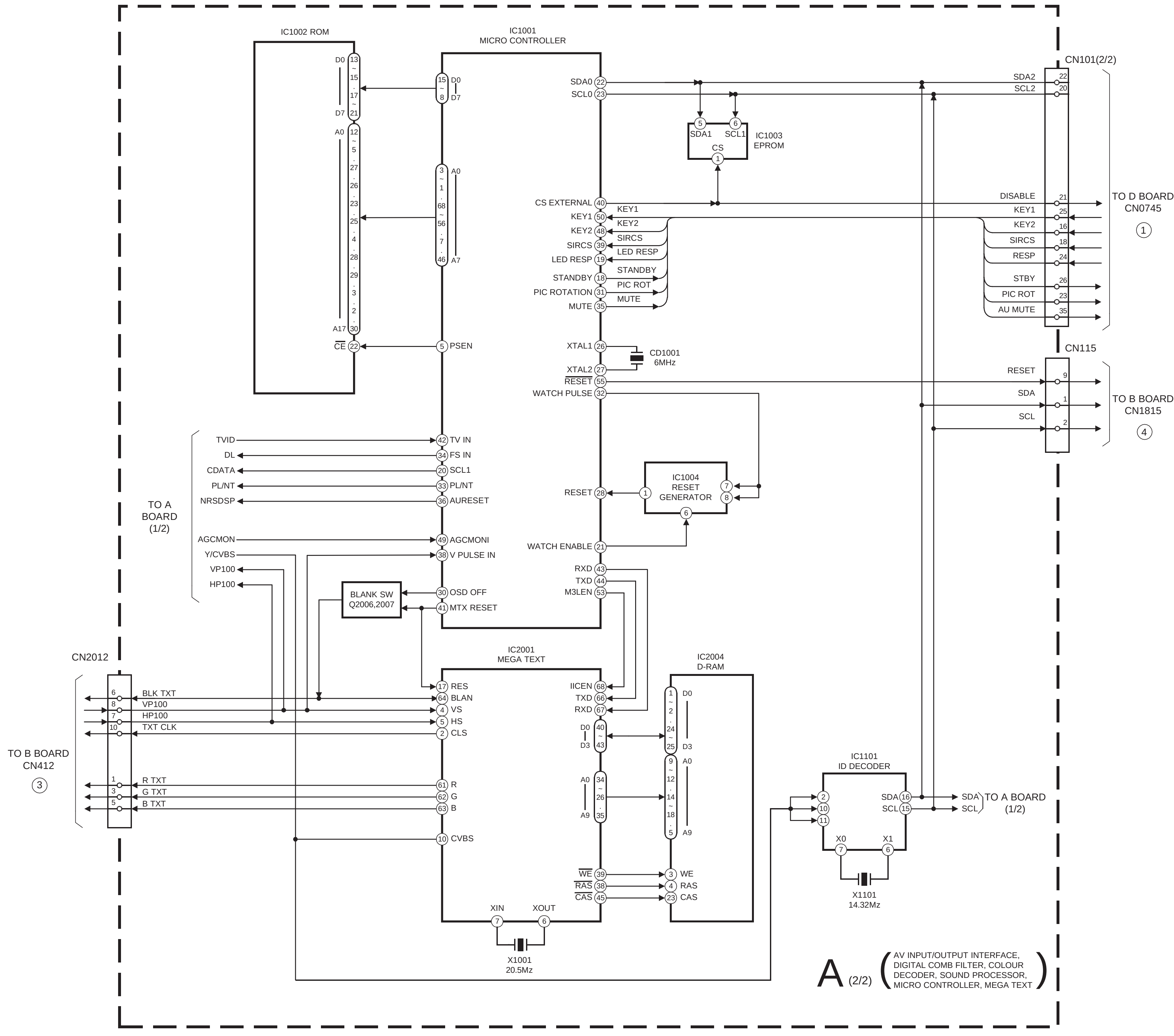
SECTION 5
DIAGRAMS

BLOCK DIAGRAM (1)



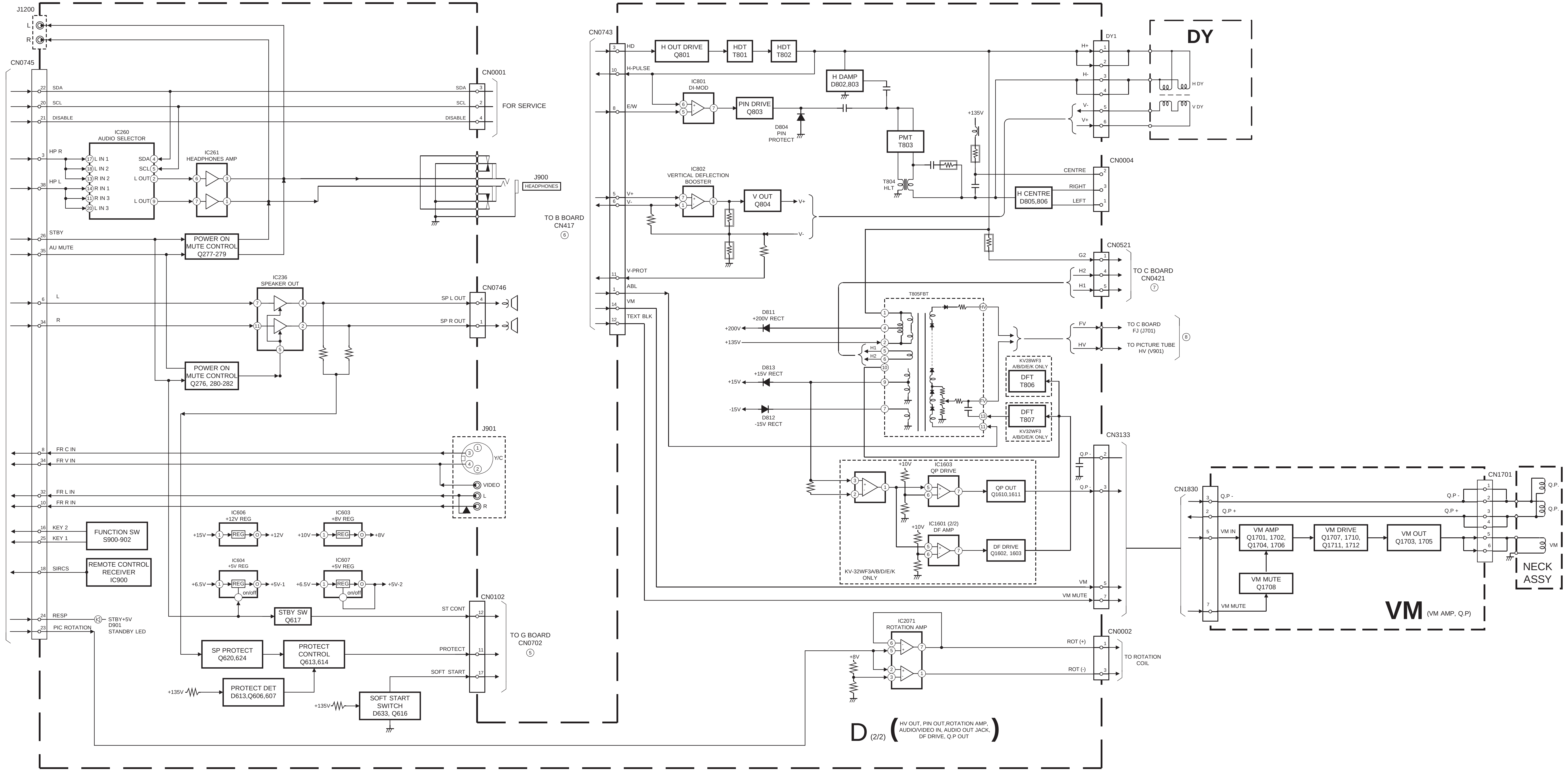
TU101
RF IN
VIDEO
QSS
AM
SCL
SDA
AGC
AGC MON
SDA
SCL
TO A BOARD (2/2)
TV ID
Q120
DL
KV-28WF3B, KV-32WF3B ONLY
TV SYSTEM FILTER Q103,104,106
KV-28WF3A/D/E/K, KV-32WF3A/D/E/K ONLY
VIDEO AMP Q110
IC104 SYNC SEP
V-S
VID
CP101
+9V
BST +B
ANT IN
MAIN OUT
SUB OUT
ATTSW
IC101 AV INPUT/OUTPUT INTERFACE
CBVS IN TV
L IN TV
R IN TV
SDA
SCL
Y/CVBS
C
L OUT
R OUT
L OUT PIP
R OUT PIP
HP L
HP R
CBVS OUT AV-2
L OUT AV-2
R OUT AV-2
V2
L2
R2
CVBS IN AV-1
L IN AV-1
R IN AV-1
CVBS IN AV-2
Y IN AV-2
C IN AV-2
L IN AV-2
R IN AV-2
CVBS IN AV-3
Y IN AV-3
C IN AV-3
L IN AV-3
R IN AV-3
MODE1
MODE2
V
L1
R1
V/Y
C
L2
R2
V3
C3
L3
R3
CN201 DUAL SCART
CVBS OUT
CVBS IN
AUDIO L1 IN
AUDIO R1 IN
CVBS Y IN
SVHS-C IN
AUDIO L2 IN
AUDIO R2 IN
MODE
MODE
RED IN
GREEN IN
BLUE IN
BLANKING
CVBS OUT
AUDIO L OUT
AUDIO R OUT
AUDIO L OUT
AUDIO R OUT
CN101 (1/2)
V3
C3
L3
R3
HP L
HP R
L
R
SP L
SP R
TO D BOARD CN0745
①
IC201 SOUND PROCESSOR (STEREO AND NICAM)
L OUT TV
R OUT TV
ANA-IN1
MONO IN (AM)
BPF FL201
R IN AV-1
L IN AV-1
XTAL
X200 18.432MHz
L OUT AV-2
R OUT AV-2
L OUT SP
R OUT SP
KV-28WF3 AND KV-32WF3 ONLY
JR1302
IC1303 DIGITAL COMB FILTER SWITCH
COMB Y
Y
Y+
Y++
C
COMB C
C
C
Q1303 AMP
Q1306 AMP
Q1305 AMP
Q1304 AMP
Q1313 AMP
Q1302 AMP
JR1301 KV-28WF3B AND KV-32WF3B ONLY
IC303
DELAY LINE
SCP
IC302 MAIN COLOUR DECODER (HELPER DECODING FOR PAL+)
U IN
V IN
Y/CVBS IN
C IN
R-Y OUT
B-Y OUT
SDA
SCL
Y OUT
U OUT
V OUT
HA
V
SCP
COMP OFF
RED
GREEN
BLUE
BLANK
R IN
G IN
B IN
FB IN
SECXTAL
REFXTAL
X301 3.58MHz
X302 4.43MHz
IC304 ARTIFICIAL INTELLIGENCE
SDA
SCL
Y IN
U IN
V IN
SCP
Y OUT
U OUT
V OUT
OUTPUT AMP Q315-317
Y50M
U50M
V50M
HAM
SCP50M
VP50M
COMP OFF
Q321,322 BUFFER
KV-28WF3A/D/E/K, KV-32 WF3A/D/E/K ONLY
CN310
TO B BOARD CN1810
②
A (1/2) (AV INPUT/OUTPUT INTERFACE,COLOUR DECODER, SOUND PROCESSOR, DOLBY NOISE REDUCTION, MICRO CONTROLLER, MEGA TEXT)

BLOCK DIAGRAM (2)



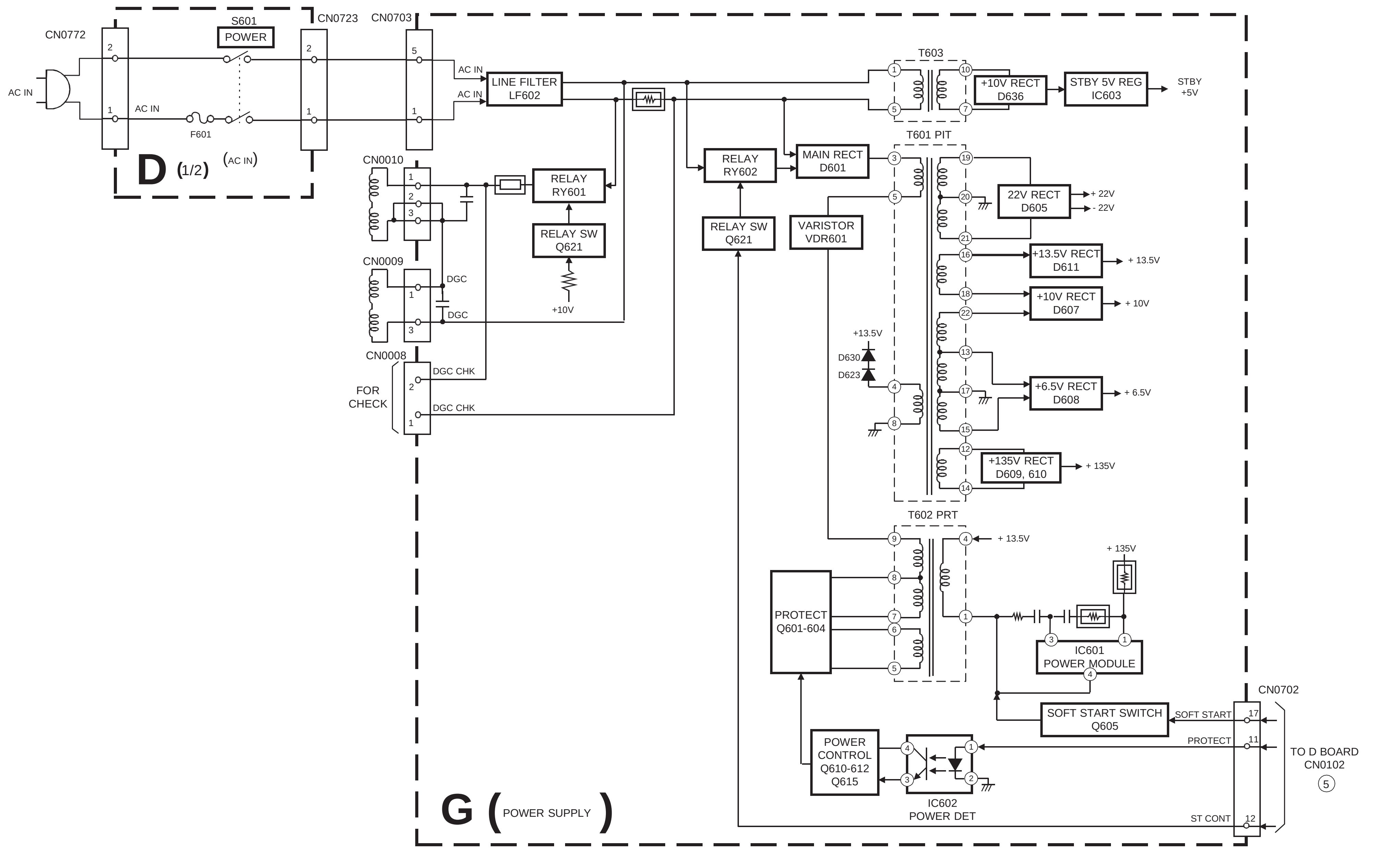
IC1002 ROM
D0
D7
A0
A17
CE
IC1001 MICRO CONTROLLER
PSEN
SDA0
SCL0
IC1003 EPROM
SDA1
SCL1
CS
CN101(2/2)
SDA2
SCL2
CS EXTERNAL
KEY1
KEY2
SIRCS
LED RESP
STANDBY
PIC ROTATION
MUTE
KEY1
KEY2
SIRCS
LED RESP
STANDBY
PIC ROT
MUTE
DISABLE
KEY1
KEY2
SIRCS
RESP
STBY
PIC ROT
AU MUTE
TO D BOARD CN0745
①
XTAL1
XTAL2
CD1001 6MHz
RESET
WATCH PULSE
CN115
RESET
SDA
SCL
TO B BOARD CN1815
④
TVID
DL
CDATA
PLNT
NRSDSP
TV IN
FS IN
SCL1
PLNT
AURESET
TO A BOARD (1/2)
AGCMON
Y/CVBS
VP100
HP100
AGCMONI
V PULSE IN
BLANK SW Q2006,2007
OSD OFF
MTX RESET
RESET
IC1004 RESET GENERATOR
WATCH ENABLE
RXD
TXD
MBLEN
CN2012
BLK TXT
VP100
HP100
TXT CLK
R TXT
G TXT
B TXT
TO B BOARD CN412
③
IC2001 MEGA TEXT
RES
BLAN
VS
HS
CLS
R
G
B
CVBS
IICEN
TXD
RXD
D0
D3
A0
A9
WE
RAS
CAS
XIN
XOUT
X1001 20.5Mz
IC2004 D-RAM
D0
D3
A0
A9
WE
RAS
CAS
IC1101 ID DECODER
SDA
SCL
X0
X1
X1101 14.32Mz
TO A BOARD (1/2)
A (2/2) (AV INPUT/OUTPUT INTERFACE, DIGITAL COMB FILTER, COLOUR DECODER, SOUND PROCESSOR, MICRO CONTROLLER, MEGA TEXT)

BLOCK DIAGRAM (3)



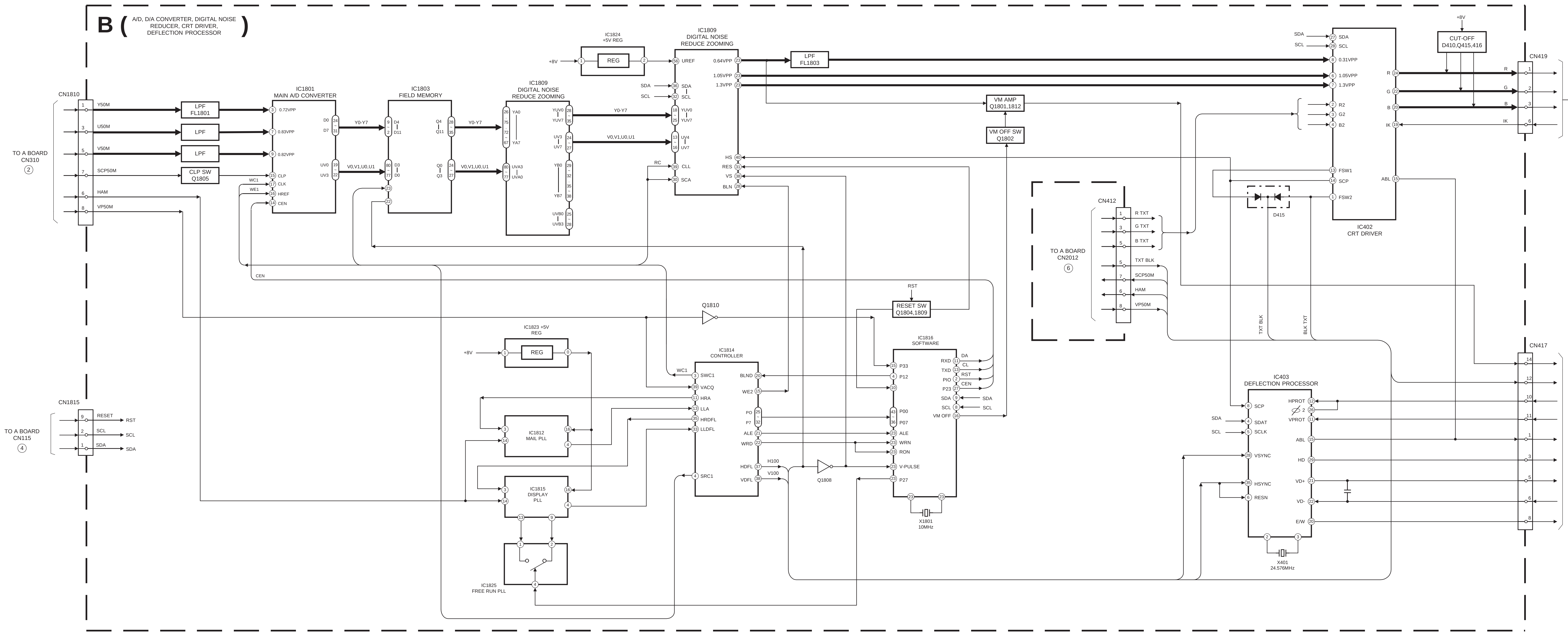
J1200
CN0745
CN0001
FOR SERVICE
IC260 AUDIO SELECTOR
IC261 HEADPHONES AMP
J900 HEADPHONES
POWER ON MUTE CONTROL Q277-279
IC236 SPEAKER OUT
CN0746
POWER ON MUTE CONTROL Q276, 280-282
TO A BOARD CN101 ①
J901
FUNCTION SW S900-902
REMOTE CONTROL RECEIVER IC900
STBY SW Q617
CN0102
TO G BOARD CN0702 ⑤
STBY+5V D601 STANDBY LED
SP PROTECT Q620,624
PROTECT CONTROL Q613,614
PROTECT DET D613,Q606,607
SOFT START SWITCH D633, Q616
IC606 +12V REG
IC603 +8V REG
IC604 +5V REG
IC607 +5V REG
TO B BOARD CN417 ④
CN0743
H OUT DRIVE Q801
HDT T801
HDT T802
H DAMP D802,803
IC801 DI-MOD
PIN DRIVE Q803
D804 PIN PROTECT
PMT T803
T804 HLT
IC802 VERTICAL DEFLECTION BOOSTER
V OUT Q804
H CENTRE D805,806
CN0004
CN0521
TO C BOARD CN0421 ⑦
T805FBT
D811 +200V RECT
D813 +15V RECT
D812 -15V RECT
TO C BOARD FJ (J701)
TO PICTURE TUBE HV (V901)
DFT T806
DFT T807
KV-28WF3 A/B/D/E/K ONLY
KV-32WF3 A/B/D/E/K ONLY
CN3133
IC1603 QP DRIVE
QP OUT Q1610,1611
IC1601 (2/2) DF AMP
DF DRIVE Q1602, 1603
KV-32WF3A/B/D/E/K ONLY
IC2071 ROTATION AMP
CN0002
TO ROTATION COIL
DY
D (2/2) (HV OUT, PIN OUT,ROTATION AMP, AUDIO/VIDEO IN, AUDIO OUT JACK, DF DRIVE, Q.P OUT)
CN1830
VM AMP Q1701, 1702, Q1704, 1706
VM DRIVE Q1707, 1710, Q1711, 1712
VM OUT Q1703, 1705
VM MUTE Q1708
CN1701
NECK ASSY
VM (VM AMP, Q.P)

BLOCK DIAGRAM (4)

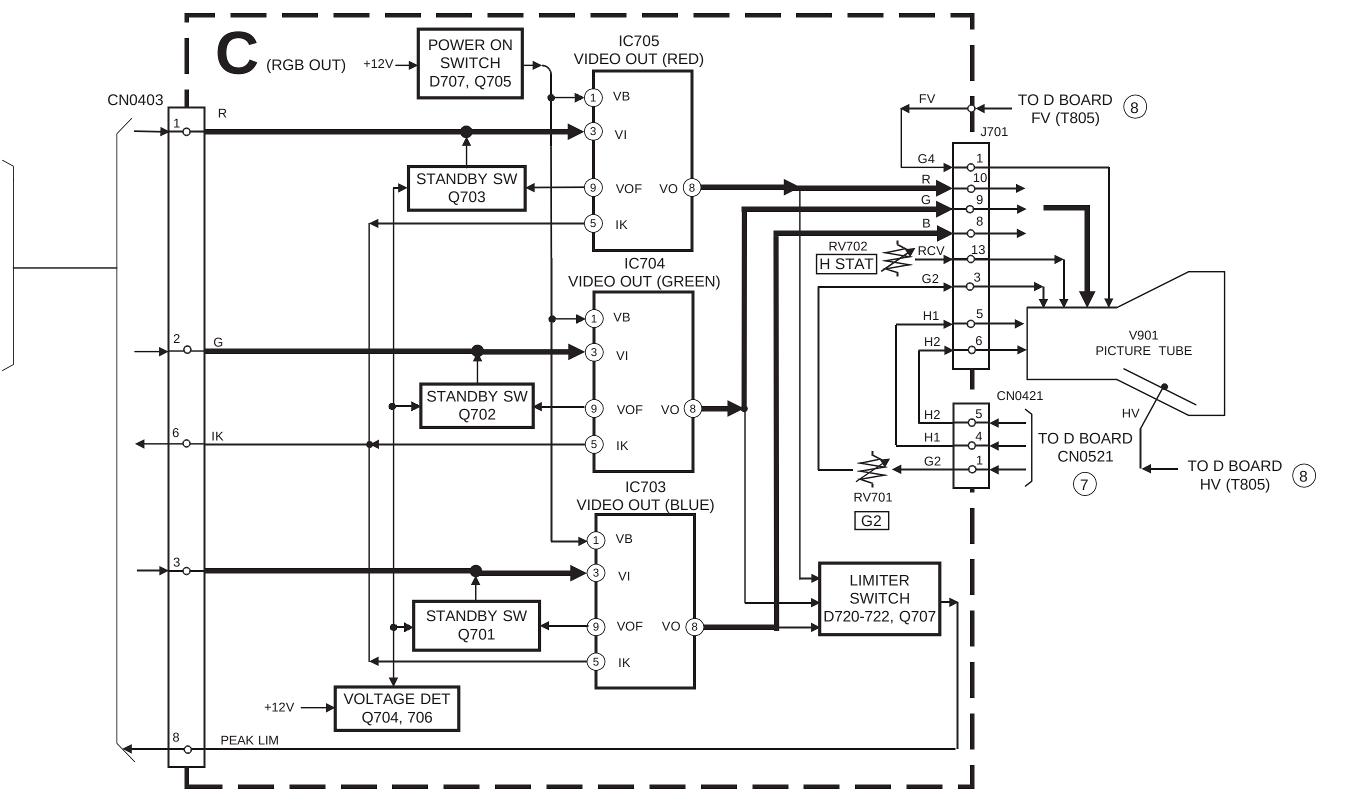


CN0772
AC IN
S601 POWER
F601
D (1/2) (AC IN)
CN0723
CN0703
LINE FILTER LF602
T603
+10V RECT D636
STBY 5V REG IC603
STBY +5V
T601 PIT
CN0010
CN0009
CN0008
FOR CHECK
DGC
DGC CHK
RELAY RY601
RELAY SW Q621
RELAY RY602
RELAY SW Q621
MAIN RECT D601
VARISTOR VDR601
22V RECT D605
+13.5V RECT D611
+10V RECT D607
+6.5V RECT D608
+135V RECT D609, 610
D630
D623
T602 PRT
PROTECT Q601-604
IC601 POWER MODULE
SOFT START SWITCH Q605
POWER CONTROL Q610-612 Q615
IC602 POWER DET
CN0702
TO D BOARD CN0102 ⑤
SOFT START
PROTECT
ST CONT
G (POWER SUPPLY)

BLOCK DIAGRAM (5)

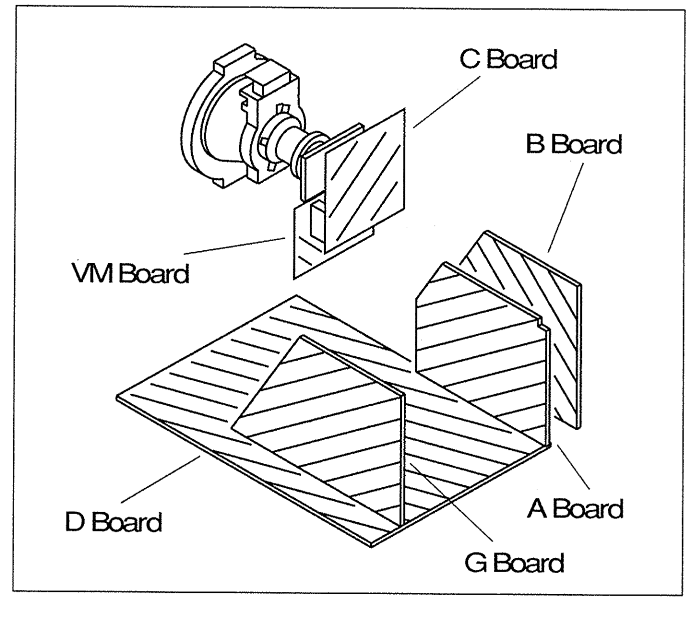

B (A/D, D/A CONVERTER, DIGITAL NOISE REDUCER, CRT DRIVER, DEFLECTION PROCESSOR)
CN1810
Y50M
U50M
V50M
SCP50M
HAM
VP50M
TO A BOARD CN310 ②
LPF FL1801
LPF
LPF
CLP SW Q1805
IC1801 MAIN A/D CONVERTER
0.72VPP
0.83VPP
0.82VPP
CLP
CLK
HREF
CEN
WC1
WE1
D0
D7
UV0
UV3
Y0-Y7
V0,V1,U0,U1
IC1803 FIELD MEMORY
D4
D11
D3
D0
Q4
Q11
Q0
Q3
IC1809 DIGITAL NOISE REDUCE ZOOMING
YA0
YA7
UVA3
UVA0
YUV0
YUV7
UV3
UV7
YB0
YB7
UVB0
UVB3
IC1824 +5V REG
REG
+8V
IC1809 DIGITAL NOISE REDUCE ZOOMING
UREF
SDA
SCL
YUV0
YUV7
UV4
UV7
CLL
SCA
HS
RES
VS
BLN
RC
0.64VPP
1.05VPP
1.3VPP
LPF FL1803
VM AMP Q1801,1812
VM OFF SW Q1802
CEN
Q1810
RST
RESET SW Q1804,1809
IC1823 +5V REG
REG
+8V
IC1814 CONTROLLER
SWC1
VACQ
HRA
LLA
HRDFL
LLDFL
SRC1
BLND
WE2
PO
P7
ALE
WRD
HDFL
VDFL
H100
V100
Q1808
IC1812 MAIL PLL
IC1815 DISPLAY PLL
IC1825 FREE RUN PLL
IC1816 SOFTWARE
P33
P12
P00
P07
ALE
WRN
RON
V-PULSE
P27
RXD
TXD
PIO
P23
SDA
SCL
VM OFF
DA
CL
RST
CEN
X1801 10MHz
CN1815
RESET
SCL
SDA
RST
TO A BOARD CN115 ④
CN412
R TXT
G TXT
B TXT
TXT BLK
SCP50M
HAM
VP50M
TO A BOARD CN2012 ⑥
TXT BLK
BLK TXT
D415
SDA
SCL
0.31VPP
1.05VPP
1.3VPP
R2
G2
B2
FSW1
SCP
FSW2
ABL
IK
IC402 CRT DRIVER
+8V
CUT-OFF D410,Q415,416
CN419
R
G
B
IK
IC403 DEFLECTION PROCESSOR
SCP
SDAT
SCLK
VSYNC
HSYNC
RESN
HPROT
VPROT
ABL
HD
VD+
VD-
E/W
X401 24.576MHz
CN417
TO D BOARD CN0743 ⑥

BLOCK DIAGRAM (6)


C (RGB OUT)
CN0403
R
G
IK
B
PEAK LIM
POWER ON SWITCH D707, Q705
+12V
IC705 VIDEO OUT (RED)
IC704 VIDEO OUT (GREEN)
IC703 VIDEO OUT (BLUE)
VB
VI
VOF
IK
VO
STANDBY SW Q703
STANDBY SW Q702
STANDBY SW Q701
+12V
VOLTAGE DET Q704, 706
LIMITER SWITCH D720-722, Q707
RV702 H STAT
RV701 G2
J701
FV
G4
R
G
B
G2
H1
H2
TO D BOARD FV (T805) ⑧
V901 PICTURE TUBE
HV
CN0421
TO D BOARD CN0521 ⑦
TO D BOARD HV (T805) ⑧

A AV INPUT/OUTPUT INTERFACE, COLOUR DECODER,
SOUND PROCESSOR, DOLBY NOISE REDUCTION,
MICRO CONTROLLER, MEGA TEXT

5-2. CIRCUIT BOARD LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μF unless otherwise noted.
- pF : μμF 50WV or less are not indicated except for electrolytic types.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5mm
Electrical power rating : 1/4W

- Chip resistors are 1/10W
- All resistors are in ohms.
  k = 1000 ohms, M = 1000,000 ohms
- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- ▭ : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages are in Volts.
- Readings are taken with a 10Mohm digital mutimeter.
- Readings are taken with a color bar input signal.
- Voltage variations may be noted due to normal production tolerences.
- ━━ : B + bus.
- ╍╍ : B - bus.
- : RF signal path.
- ⊥ : earth - ground.
- : earth - chassis.

Reference Information

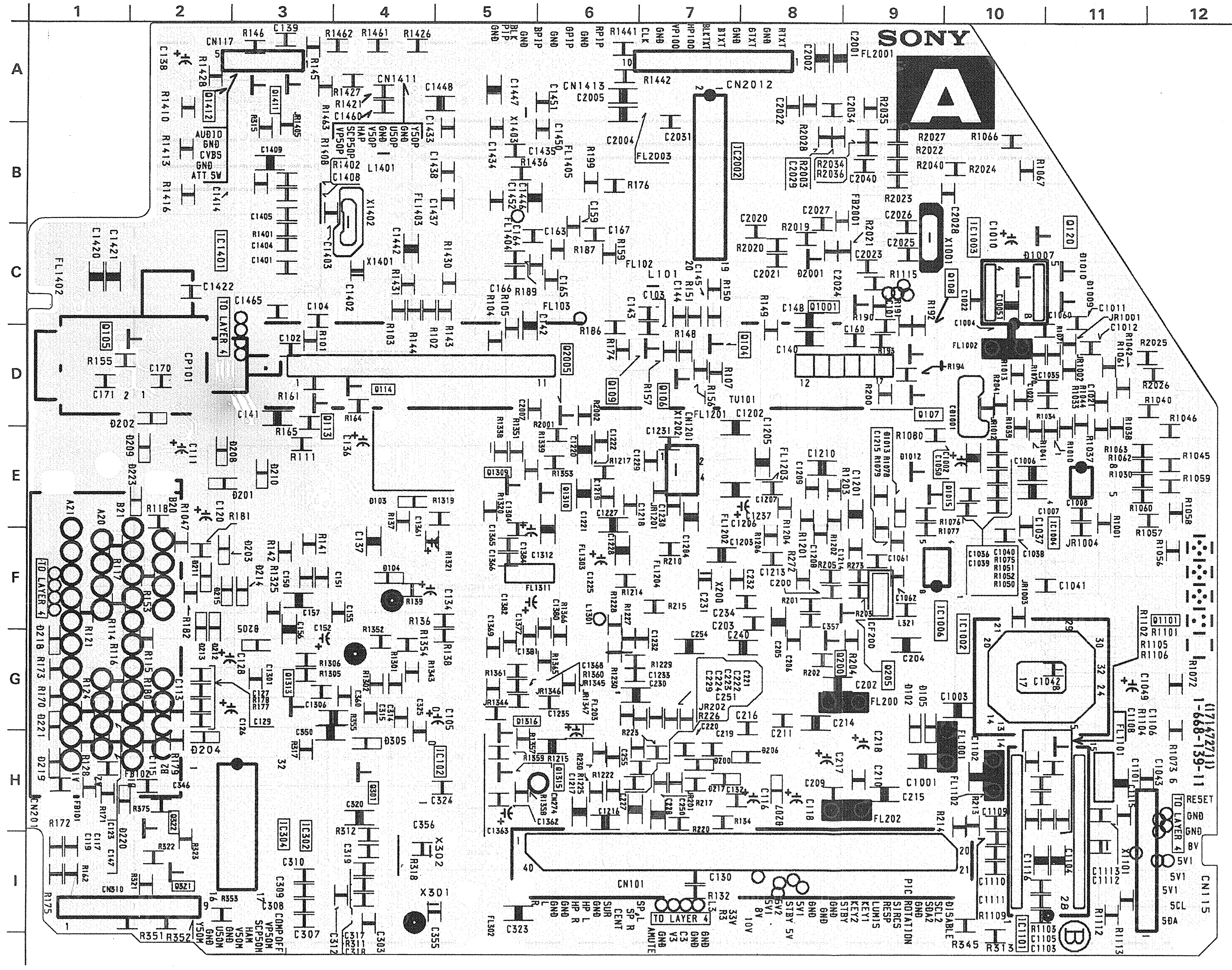
RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NON FLAMMABLE CARBON
	FUSE	: NON FLAMMABLE FUSIBLE
	RS	: NON FLAMMABLE METAL OXIDE
	RB	: NON FLAMMABLE CEMENT
	RW	: NON FLAMMABLE WIREWOUND
	※	: ADJUSTMENT RESISTOR
COIL	LF-8L	: MICRO INDUCTOR
CAPACITOR	TA	: TANTALUM
	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

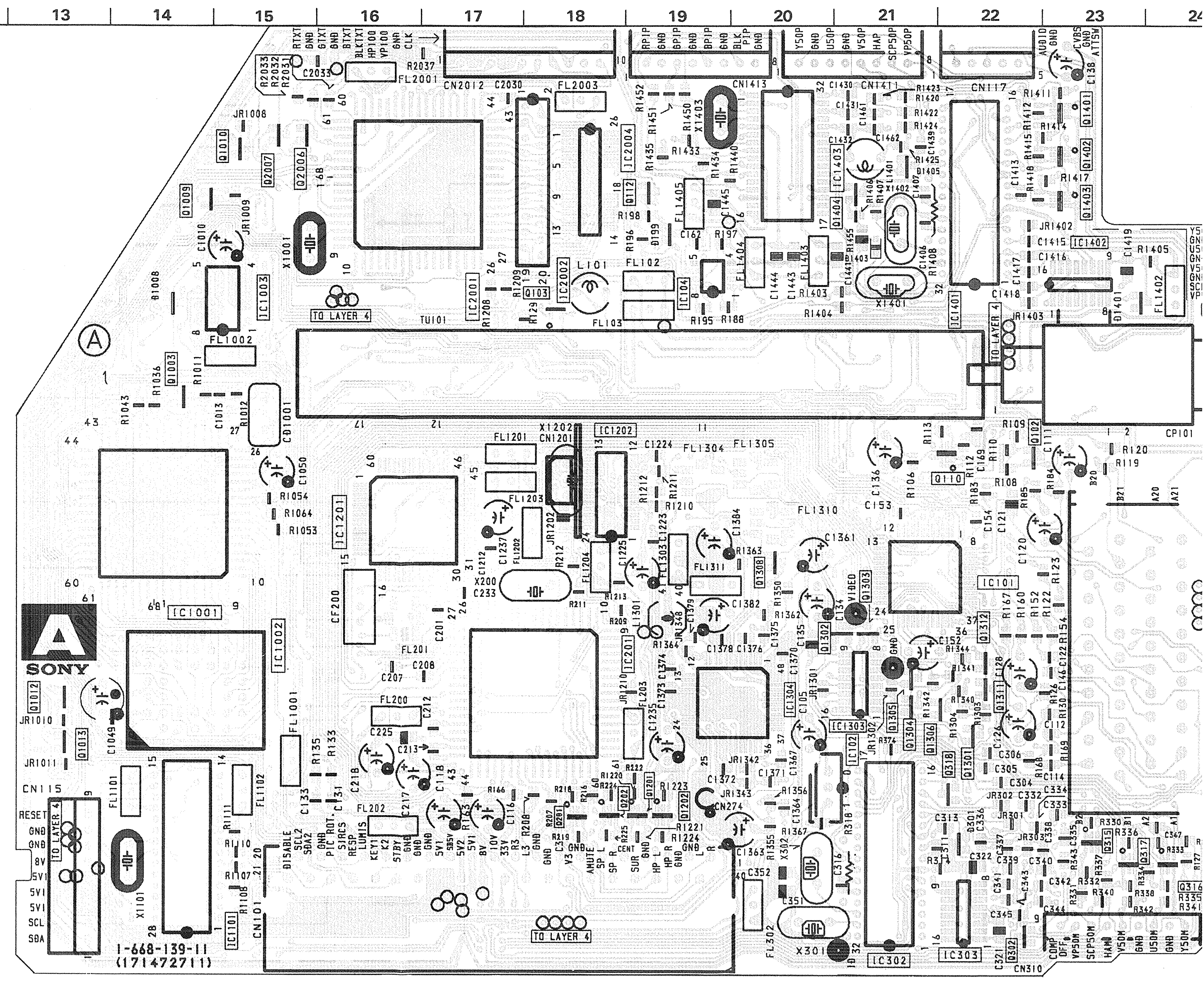
Note : Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié. specified.

- Readings are taken with a colour-bar signal input.
- Readings are taken with 10M digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- ━━ : B+ bus.
- ➡ : signal path. (RF)

A Board < Conductor Side >

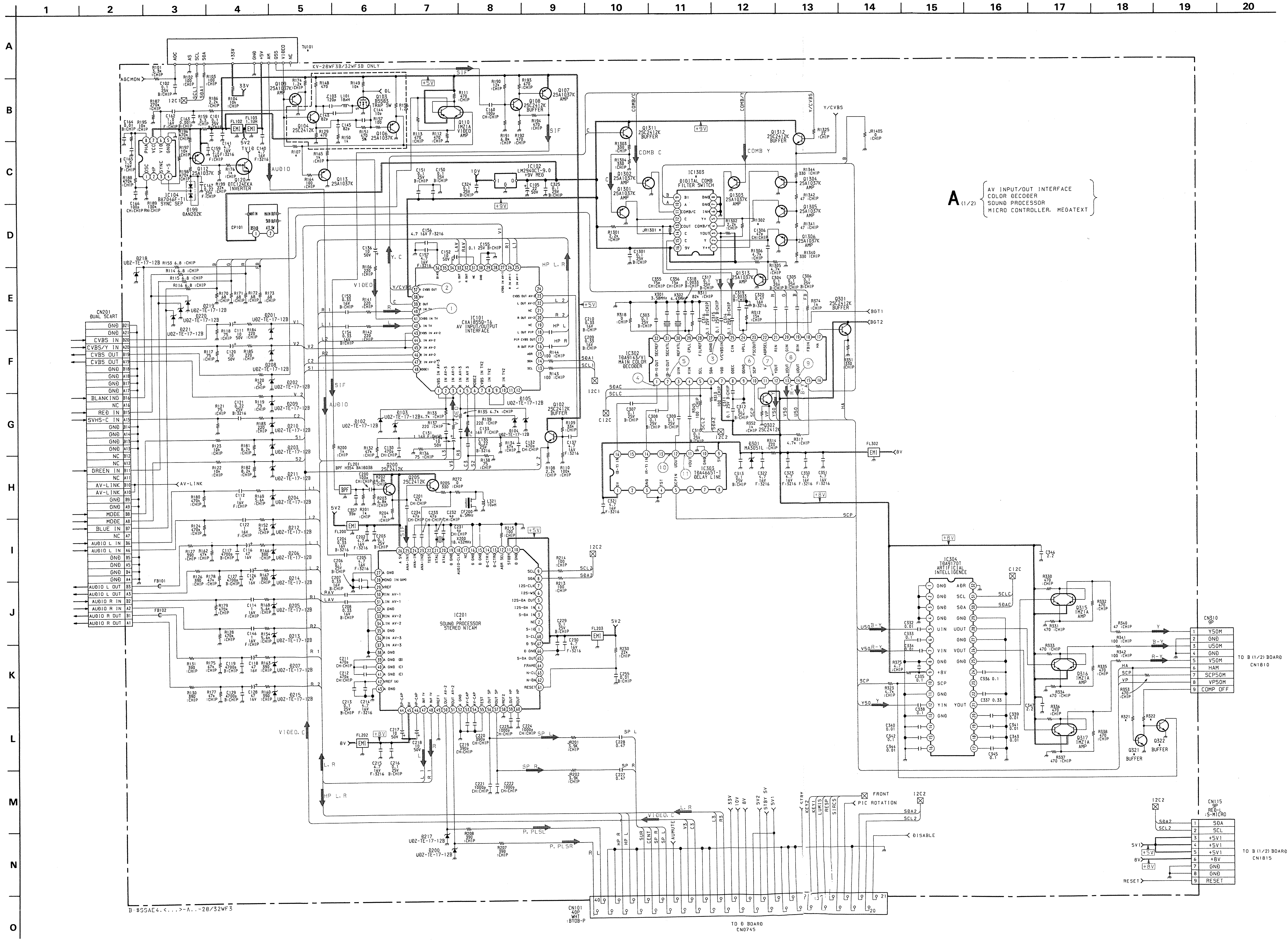


A Board < Component Side >



A BOARD

IC			
IC001	E - 22	Q1311	G - 22
IC002	H - 4	Q1312	F - 22
IC004	C - 19	Q1313	G - 3
IC201	G - 19	Q2005	D - 6
IC302	H - 3	Q2006	B - 15
IC303	I - 22	Q2007	B - 15
IC304	H - 3	**DIODE**	
IC1001	F - 14	D102	G - 9
IC1002	G - 10	D103	E - 4
IC1003	C - 10	D104	F - 4
IC1004	E - 11	D105	G - 9
IC1101	I - 10	D199	C - 19
IC2001	C - 17	D200	H - 7
IC2004	B - 19	D201	E - 2
		D202	D - 2
TRANSISTOR		D203	F - 3
Q102	E - 23	D204	H - 2
Q103	C - 18	D205	F - 3
Q104	D - 8	D206	H - 8
Q106	D - 7	D207	H - 8
Q108	C - 10	D208	E - 2
Q109	D - 7	D209	E - 2
Q112	B - 19	D210	E - 3
Q112	B - 19	D211	F - 2
Q120	C - 11	D212	G - 2
Q200	G - 8	D213	G - 2
Q205	F - 9	D214	F - 3
Q301	H - 4	D215	F - 2
Q302	I - 22	D217	H - 7
Q315	H - 23	D218	G - 1
Q316	I - 24	D219	H - 1
Q317	I - 24	D220	H - 1
Q318	H - 22	D221	G - 1
Q321	I - 2	D223	E - 2
Q322	H - 2	D301	H - 22
Q1001	C - 9	D1007	C - 10
Q1011	C - 14	D1008	C - 14
Q1301	H - 22	D1009	C - 11
Q1304	G - 21	D1010	C - 11
Q1305	G - 21	D2001	C - 8
Q1306	G- 22		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J
K
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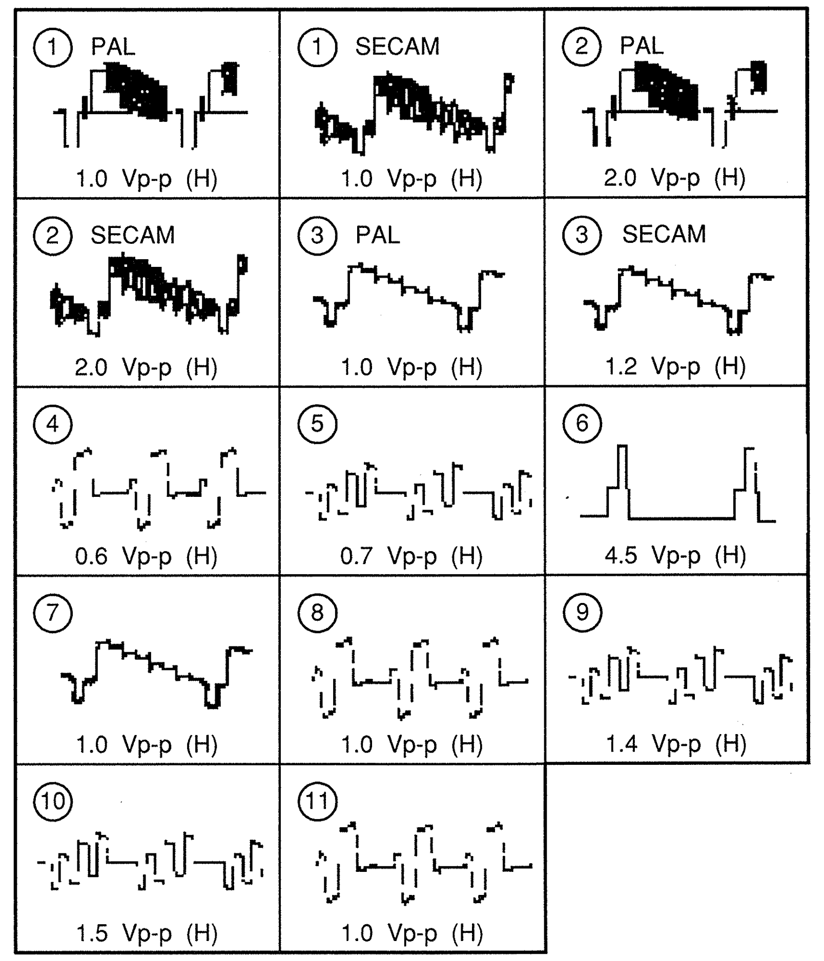
M
N
O
A (1/2) AV INPUT/OUT INTERFACE
COLOR DECODER
SOUND PROCESSOR
MICRO CONTROLLER, MEGATEXT
CN201 DUAL SCART
CVBS IN
CVBS/Y IN
CVBS OUT
BLANKING IN
RED IN
SVHS-C IN
GREEN IN
AV-LINK
BLUE IN
AUDIO L IN
AUDIO L OUT
AUDIO R IN
AUDIO R OUT
GND
MODE
TU101
KV-28WF3B/32WF3B ONLY
IC101 CXA1855Q-T1 AV INPUT/OUTPUT INTERFACE
IC201 SOUND PROCESSOR STEREO NICAM
IC1303 DIGITAL COMB FILTER SWITCH
IC302 TDA9143/N1 MAIN COLOR DECODER
IC303 TDA4665T-1 DELAY LINE
IC304 TDA9170T ARTIFICIAL INTELLIGENCE
CN310 TO B (1/2) BOARD CN1810
CN315 TO B (1/2) BOARD CN1815
CN101 TO D BOARD CN0745
B $SSAE4.<...>-A..-28/32WF3

A (1/2) BOARD IC VOLTAGE TABLE

IC Voltage Table					
Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC201	4	0.5	IC1201	4	4.7
	5 - 6	4.7		13	4.7
	7	2.4		31	4.7
	8 - 9	4.7		35	4.7
	20	2.4		37	2.7
	24	4.4		39	2.2
	25	8.8		40	2.7
	26	4.4		41	4.7
	28	3.8		45	4.8
	29	2.7		29	2.7
	30 - 31	3.8		30 - 31	3.8
	39 - 42	3.8		39 - 42	3.8
	44	6.2		44	6.2
	45	8.0		45	8.0
	46	7.0	IC1303	1	5.0
	47 - 48	3.8		5	0.6
	50 - 51	3.7		11 - 12	3.0
	53 - 54	3.8		14	1.4
	56 - 57	1.2		16	1.2
	61	4.8	IC1401	1 -2	2.0
IC302	1 - 2	2.0		3 - 4	2 - 4
	3 - 4	2.4		5	3.5
	5	3.0		6	4.0
	6	4.0		7	7.8
	7	8.0		8	5.0
	8	5.0		10	0.8
	10	0.5		12	2.4
	12	3.2		13 - 14	26
	13 - 14	2.6		15	8.0
	15	8.0		17	0.3
	17	0.3		22	7.8
	19	1.6		24	3.6
	21	1.0		26	3.3
	23 - 24	4.0		28	3.5
	26	3.7		29	4.3
	28	3.5		30	2.6
	29	5.0		31	2.6
	30	2.5		32	3.8
	31	2.5			
	32	2.0			

WAVEFORMS A BOARD

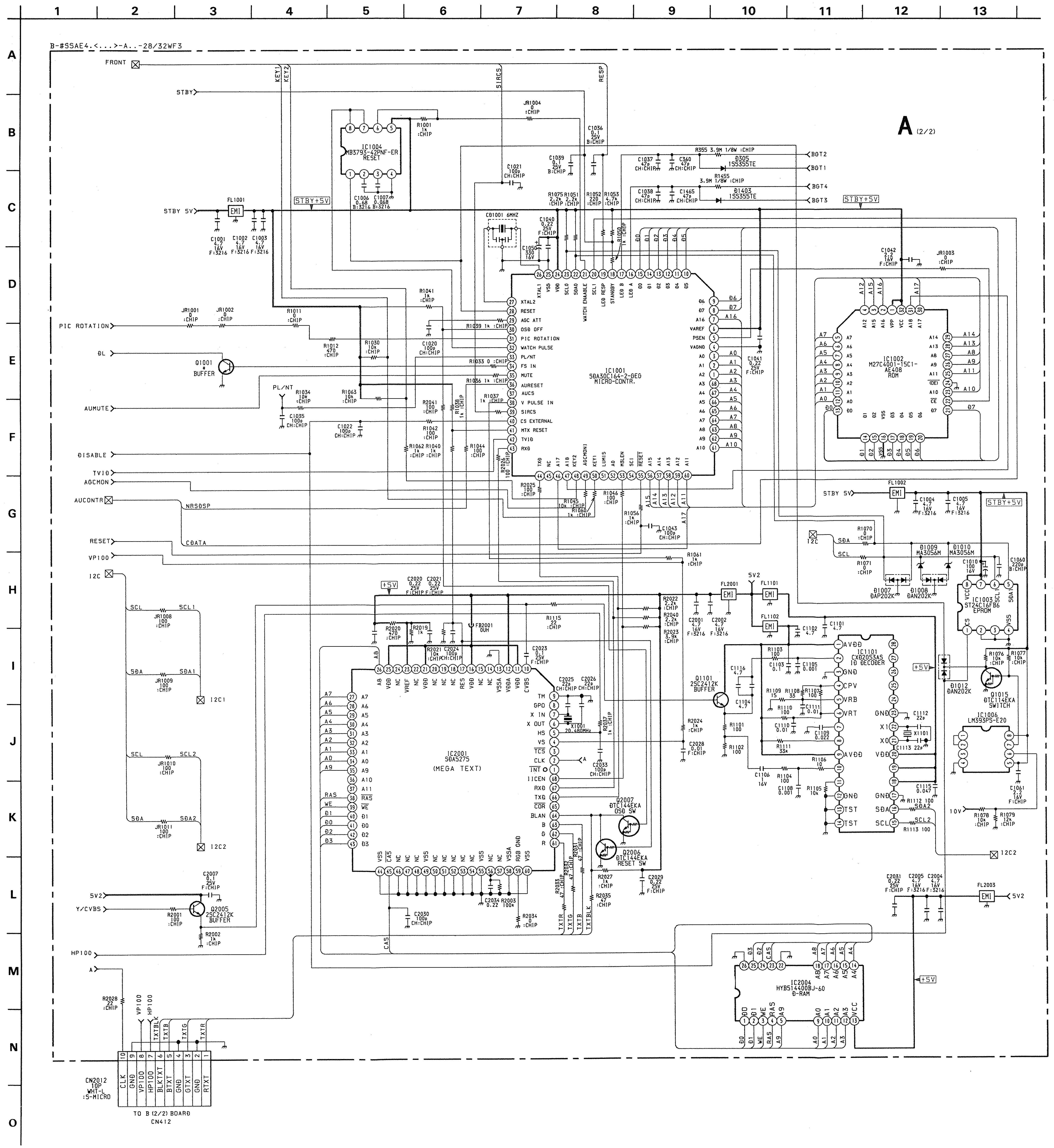


A (1/2) BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q102	1.9	4.7	1.3
Q105	0.08	4.5	0.08
Q107	4.4	1.7	5.0
Q108	1.8	4.4	1.2
Q112	4.3	4.9	5.0
Q120	4.6	0.1	0.1
Q301	0.5	8.0	0.4
Q302	-	8.0	0.3
Q318	0.1	5.2	0.1
Q1201	8.6	5.0	9.2
Q1202	0.7	5.0	9.2
Q1301	1.9	-	0.2
Q1302	-	-	0.6
Q1303	0.8	-	1.5
Q1304	2.2	-	0.1
Q1305	2.0	-	0.1
Q1306	1.7	-	-
Q1307	-	3.4	0.1
Q1308	3.5	4.7	2.9
Q1309	0.9	0.1	1.6
Q1310	1.0	0.1	1.6
Q1311	4.5	9.0	3.9
Q1312	4.5	9.0	-
Q1313	4.6	0.7	0.1
Q1314	4.8	4.7	4.3
Q1404	4.5	7.8	3.8
Q1411	0.5	8.0	0.6
Q1412	0.1	8.0	0.1
Q1201	2.6	8.6	2.1
Q1202	2.6	8.6	2.1

A BOARD * MARK

Ref	28WF3A	28WF3B	28WF3D	28WF3E	28WF3K	32WF3A	32WF3B	32WF3D	32WF3E	32WF3K
IC201	MSP3400C-PS-C6-T	MSP3410D-PS-B4-T	MSP3400C-PS-C6-T	MSP3410D-PS-B4-T	MSP3410D-PS-B4-T	MSP3400C-PS-C6-T	MSP3410D-PS-B4-T	MSP3400C-PS-C6-T	MSP3410D-PS-B4-T	MSP3410D-PS-B4-T
IC1303	MC14052BDR2	-	MC14052BDR2	MC14052BDR2	MC14052BDR2	MC14052BDR2	-	MC14052BDR2	MC14052BDR2	MC14052BDR2
JR1301	-	SHORT 0	-	-	-	-	SHORT 0	-	-	-
JR1302	-	SHORT 0	-	-	-	-	SHORT 0	-	-	-
Q321	2SC2412K-T-146-R	-	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R	-	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R
Q322	2SC2412K-T-146-R	-	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R	-	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R
Q1001	-	2SC2412K-T-146-R	-	-	-	-	2SC2412K-T-146-R	-	-	-
R107	SHORT 0	-	SHORT 0	SHORT 0	SHORT 0	SHORT 0	-	SHORT 0	SHORT 0	SHORT 0
R321	10K	-	10K	10K	10K	10K	-	10K	10K	10K
R322	10K	-	10K	10K	10K	10K	-	10K	10K	10K
TU101	1-693-338-11	1-693-340-11	1-693-338-11	1-693-338-11	1-693-338-11	1-693-338-11	1-693-340-11	1-693-338-11	1-693-338-11	1-693-338-11
R1052	330	330	330	220	220	330	330	330	220	220


A (2/2)
B-#55AE4.<...>-A..-28/32WF3
IC1001 SDA30C164-2-GEG MICRO-CONTR.
IC1002 M27C4001-15C1-AE408 ROM
IC1004 MB3793-42PNF-ER RESET
IC2001 SDA5275 (MEGA TEXT)
IC1101 CXD2055AS
IC2004 HYB514400BJ-60 D-RAM
IC1003 EPROM
IC1004 LM393PS-E20
Q1001 BUFFER
Q1101 2SC2412K BUFFER
Q2005 2SC2412K BUFFER
Q1015 SWITCH
CD1001 6MHZ
STBY+5V
BGT1
BGT2
BGT3
BGT4
FRONT
STBY
STBY 5V
PIC ROTATION
BL
AUMUTE
DISABLE
TV10
AGCMON
AUCONTR
RESET
VP100
I2C
I2C1
I2C2
5V2
Y/CVBS
HP100
CN2012
TO B (2/2) BOARD CN412

A (2/2) BOARD IC VOLTAGE TABLE

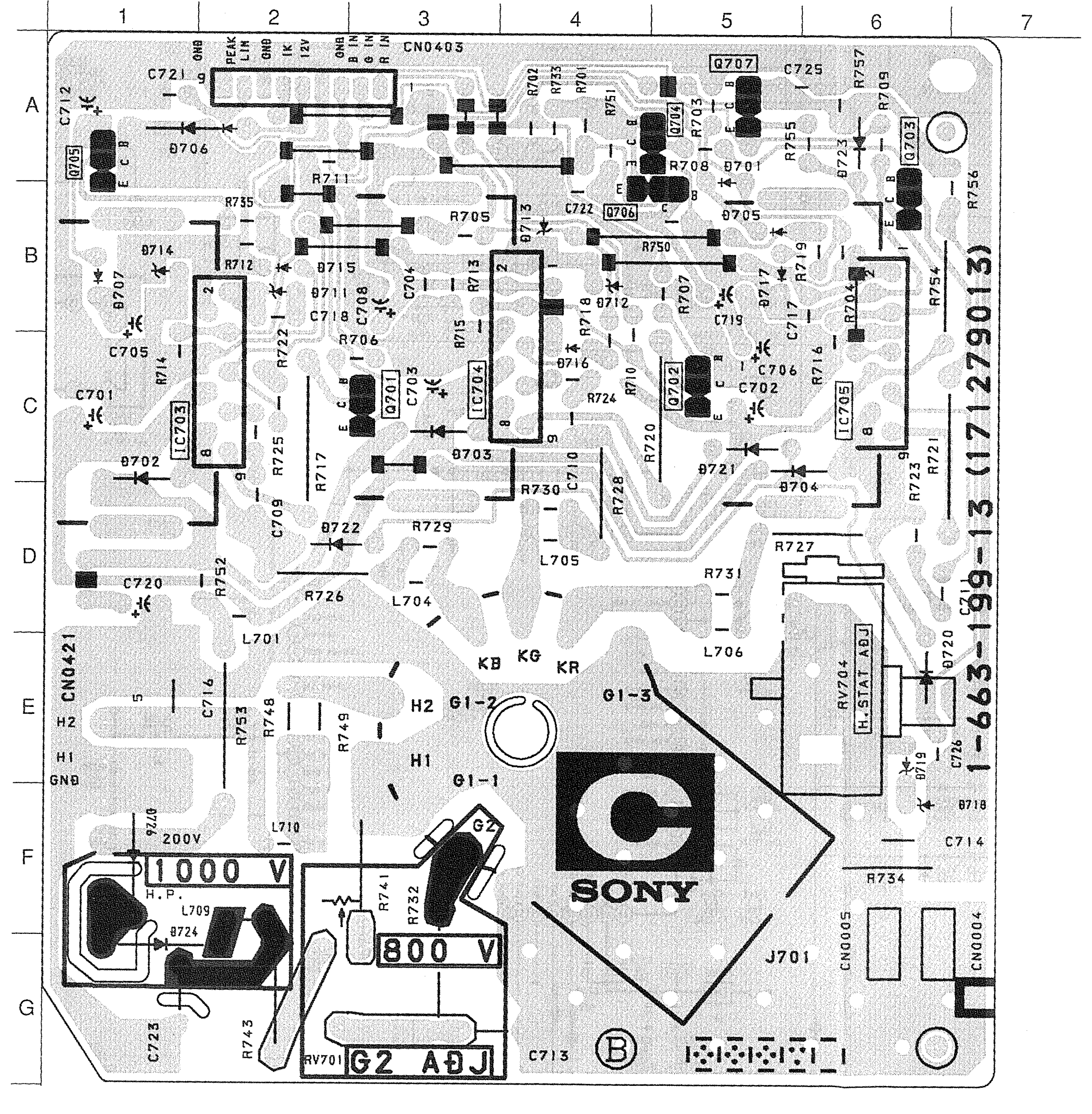
IC Voltage Table					
Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC101	1 - 5	4.6	IC1101	1	4.8
	7 - 8	4.6		2	1.1
	10	4.6		4	0.9
	17	4.6		5	0.3
	23	4.6		6 - 7	2.4
	29	4.6		8	1.4
	31	4.6		9	4.7
	34	4.6		10	1.7
	36	4.6		11	1.5
	38	9.0		16	4.0
	40 - 47	4.6		18 - 20	4.7
IC1001	5	2.4		21	2.5
	6	4.8		22	2.3
	19	3.6	IC2001	2	0.4
	20	0.1		5	0.3
	24	4.8		6 - 7	1.6
	26	2.1		8	4.0
	27	2.3		10	1.0
	28	4.6		11 - 12	4.7
	30	0.1		16	4.7
	31 - 32	2.4		21	4.7
	33	4.8		23	2.9
	36	4.1		25	4.7
	38	0.1		66	4.7
	39	0.6		68	4.7
	40	4.8			
	41	0.1			
	42	4.8			
	43	4.4			
	44	4.1			
	48	4.8			
	49	2.2			
	50	4.8			
	52	4.8			
	54	4.8			

A (2/2) BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q1001	0.1	0.7	0.1
Q1004	0.1	0.7	-
Q1101	3.3	5.0	2.6

C [RGB OUT]

C Board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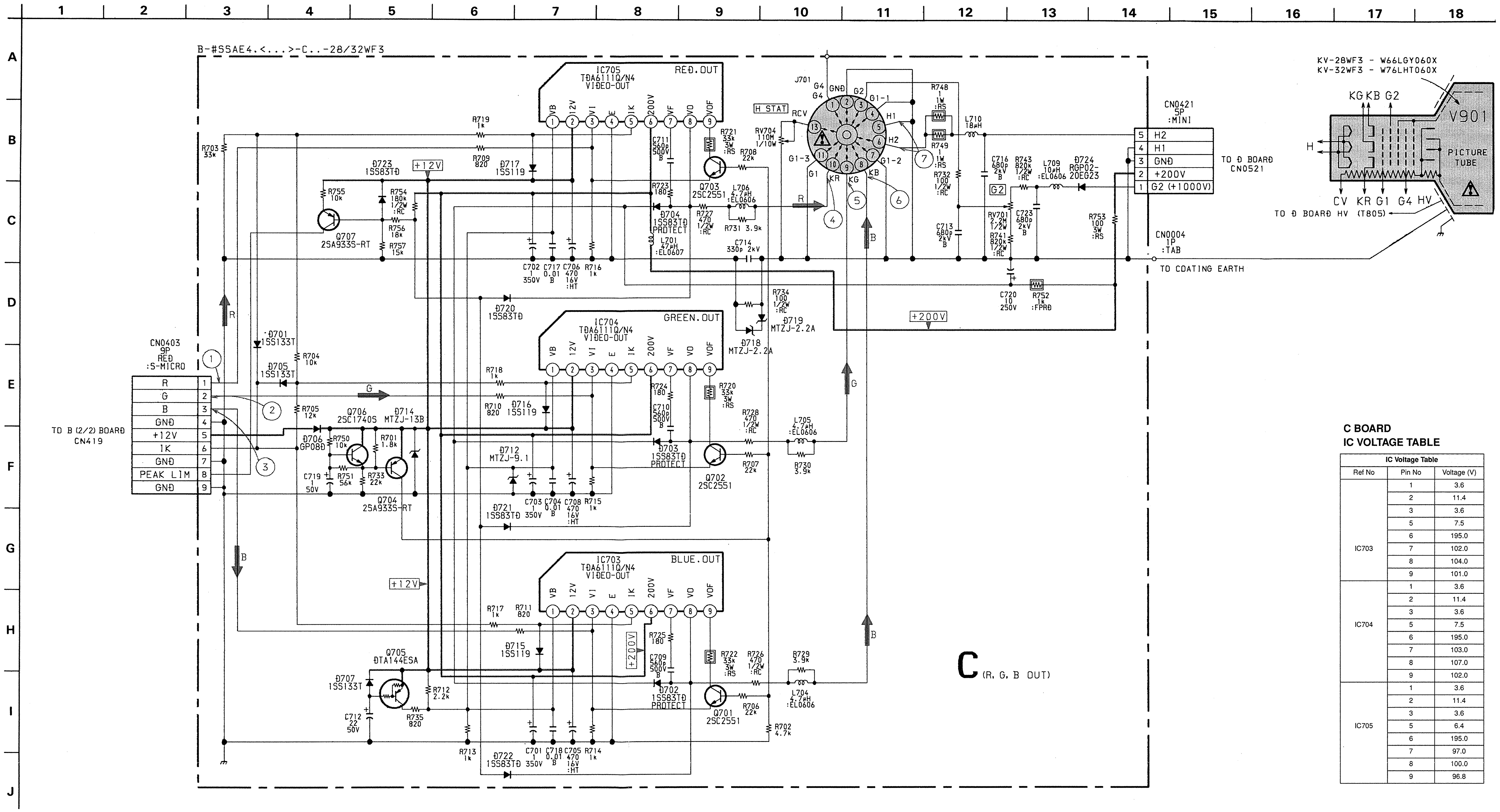
IC703
IC704
IC705
Q701
Q702
Q703
Q704
Q705
Q706
Q707
CN0403
CN0421
CN0004
CN0005
J701
RV701
RV704
G2 ADJ
1000 V
800 V
200V
H.P.
KB
KG
KR
G1-3
G1-2
G1-1
H1
H2
GND
SONY
1-663-199-13 (1712790113)

C BOARD

IC	
IC703	C-1
IC704	C-3
IC705	C-6
TRANSISTOR	
Q701	C-3
Q702	C-5
Q703	A-6
Q704	A-5
Q705	A-1
Q706	B-4
Q707	A-5
DIODE	
D701	A-5
D702	C-1
D703	C-3
D704	C-6
D705	B-5
D706	A-1
D707	B-1
D712	B-4
D714	B-1
D715	B-2
D716	C-4
D717	B-6
D718	F-6
D719	E-6
D720	E-6
D721	C-5
D722	D-2
D723	A-6
D724	F-1
VARIABLE RESISTOR	
RV701	G-1
RV704	E-6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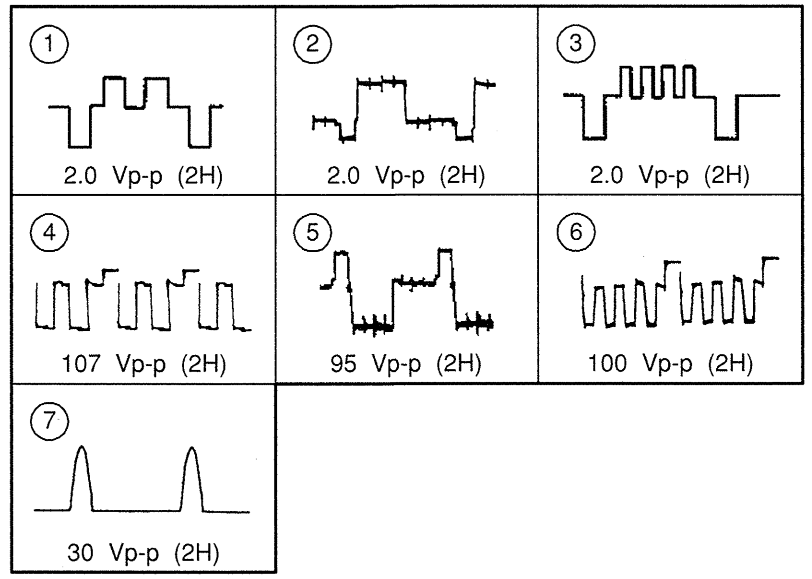
J
B-#S5AE4.<...>-C..-28/32WF3
IC705
TDA6111Q/N4
VIDEO-OUT
RED.OUT
VB
12V
VI
E
IK
200V
VF
VO
VOF
R719 1k
R709 820
R703 33k
D723 1SS83TD
+12V
D717 1SS119
R755 10k
R754 180k 1/2W :RC
R756 18k
R757 15k
Q707 2SA933S-RT
C711 560p 500V B
R723 180
D704 1SS83TD PROTECT
L701 47μH :EL0607
R721 33k 3W :RS
Q703 2SC2551
R708 22k
R727 470 1/2W :RC
L706 4.7μH :EL0606
R731 3.9k
C714 330p 2kV
C702 1 350V
C717 0.01 B
C706 470 16V :HT
R716 1k
D720 1SS83TD
R734 100 1/2W :RC
D719 MTZJ-2.2A
D718 MTZJ-2.2A
H STAT
RCV
RV704 110M 1/10W
J701
G4
G4
GND
G2
G1-1
H1
H2
G1-2
G1-3
G1
KR
KG
KB
R
B
G
R748 1 1W :RS
R749 1 1W :RS
L710 18μH
R732 100 1/2W :RC
C713 680p 2kV B
C716 680p 2kV B
R743 820k 1/2W :RC
L709 10μH :EL0606
D724 RGP02-20EG23
G2
RV701 2.2M 1/2W
C723 680p 2kV B
R741 820k 1/2W :RC
C720 10 250V
R752 1k :FPRD
R753 100 3W :RS
+200V
CN0421 5P :MINI
5 H2
4 H1
3 GND
2 +200V
1 G2 (+1000V)
TO D BOARD CN0521
CN0004 1P :TAB
TO COATING EARTH
KV-28WF3 - W66LGY060X
KV-32WF3 - W76LHT060X
V901
PICTURE TUBE
KG KB G2
H
CV KR G1 G4 HV
TO D BOARD HV (T805)
CN0403 9P RED :S-MICRO
R 1
G 2
B 3
GND 4
+12V 5
IK 6
GND 7
PEAK LIM 8
GND 9
TO B (2/2) BOARD CN419
D701 1SS133T
R704 10k
D705 1SS133T
R705 12k
D706 GP08D
R750 10k
Q706 2SC1740S
R701 1.8k
D714 MTZJ-13B
C719 1 50V
R751 56k
R733 22k
Q704 2SA933S-RT
IC704
TDA6111Q/N4
VIDEO-OUT
GREEN.OUT
R718 1k
R710 820
D716 1SS119
R724 180
C710 560p 500V B
D703 1SS83TD PROTECT
R720 33k 3W :RS
R728 470 1/2W :RC
Q702 2SC2551
R707 22k
L705 4.7μH :EL0606
R730 3.9k
D712 MTZJ-9.1
C703 1 350V
C704 0.01 B
C708 470 16V :HT
R715 1k
D721 1SS83TD
IC703
TDA6111Q/N4
VIDEO-OUT
BLUE.OUT
R717 1k
R711 820
D715 1SS119
R725 180
C709 560p 500V B
D702 1SS83TD PROTECT
R722 33k 3W :RS
R726 470 1/2W :RC
R729 3.9k
Q701 2SC2551
R706 22k
L704 4.7μH :EL0606
R702 4.7k
Q705 DTA144ESA
D707 1SS133T
R712 2.2k
C712 22 50V
R735 820
R713 1k
C701 1 350V
C718 0.01 B
C705 470 16V :HT
R714 1k
D722 1SS83TD
C (R, G, B OUT)

WAVEFORMS C BOARD



C BOARD
IC VOLTAGE TABLE

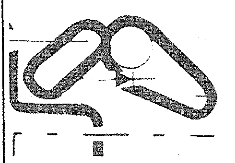
IC Voltage Table

Ref No	Pin No	Voltage (V)
IC703	1	3.6
	2	11.4
	3	3.6
	5	7.5
	6	195.0
	7	102.0
	8	104.0
	9	101.0
IC704	1	3.6
	2	11.4
	3	3.6
	5	7.5
	6	195.0
	7	103.0
	8	107.0
	9	102.0
IC705	1	3.6
	2	11.4
	3	3.6
	5	6.4
	6	195.0
	7	97.0
	8	100.0
	9	96.8

C BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table

Ref No	(B) Base	(C) Collector	(E) Emitter
Q701	4.2	3.7	3.6
Q702	4.2	3.7	3.6
Q703	4.2	3.7	3.6
Q704	10.7	11.2	11.3
Q705	11.3	3.6	11.3
Q706	11.3	11.3	10.7
Q707	11.8	9.8	11.3



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

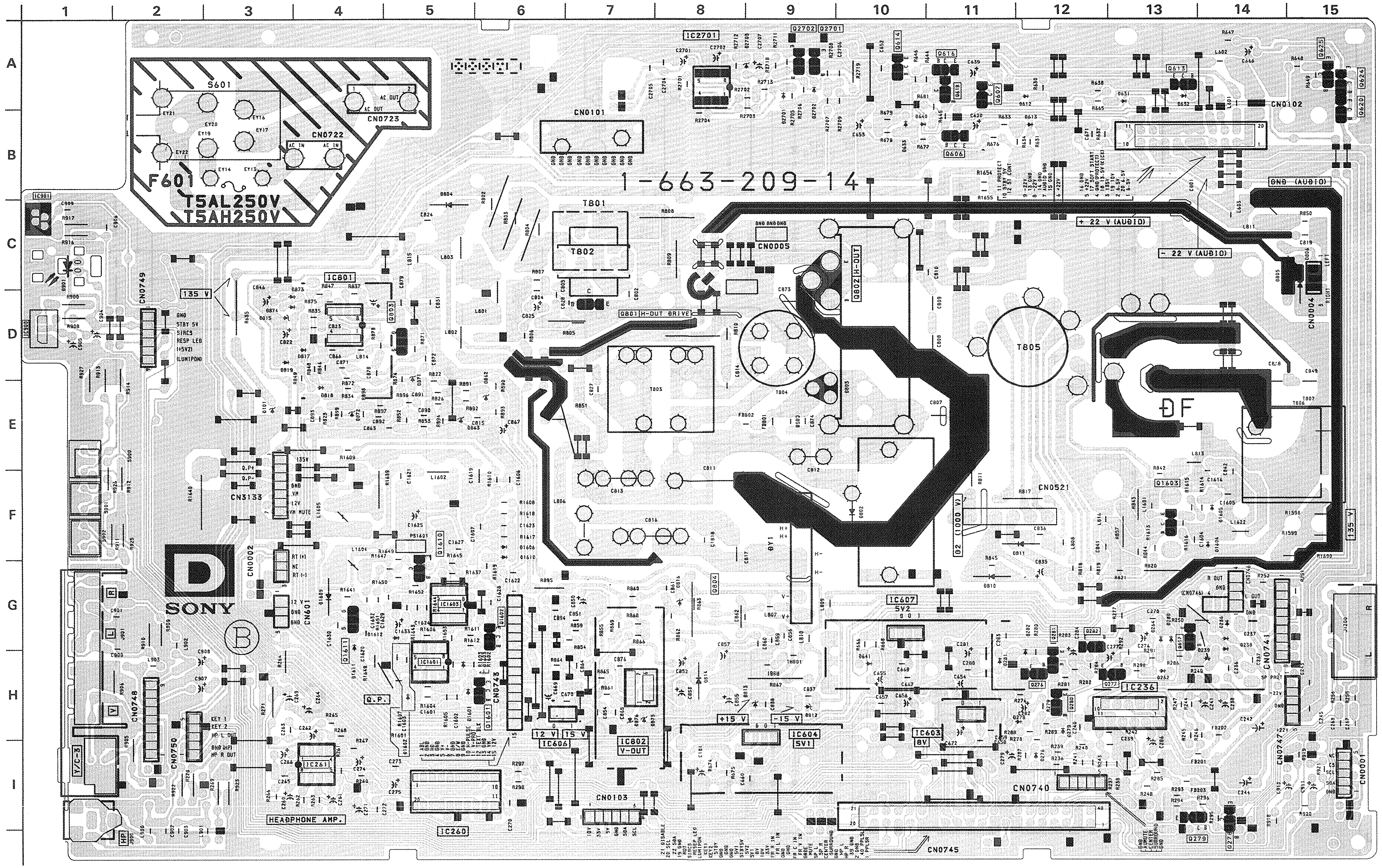
D BOARD

IC		DIODE	
IC236	H - 13	D101	E - 3
IC260	I - 5	D236	G - 14
IC261	I - 4	D237	G - 14
IC603	H - 11	D238	G - 14
IC604	H - 9	D239	G - 14
IC606	H - 7	D262	H - 13
IC607	G- 10	D264	G - 13
IC801	C - 4	D276	I - 12
IC802	H - 8	D278	H - 12
IC1601	H - 5	D279	H - 12
IC1603	G - 5	D280	G - 13
IC2701	A - 8	D281	H - 12
TRANSISTOR		D282	G - 12
Q276	H12	D612	A - 12
Q277	H - 13	D613	B - 12
Q278	I - 14	D631	A - 13
Q279	I - 14	D632	A - 14
Q280	H - 12	D633	B - 11
Q281	G - 12	D802	F - 10
Q282	G - 13	D803	E - 10
Q606	B- 11	D804	B - 5
Q607	A - 11	D805	C - 15
Q613	A - 13	D806	C - 15
Q614	A - 10	D810	G - 11
Q616	A - 11	D811	F - 12
Q617	G - 13	D812	H - 9
Q618	A - 11	D813	H - 9
Q620	A - 15	D814	H - 8
Q624	A - 15	D815	D - 3
Q801	D - 7	D816	G - 8
D802	C - 10	D817	D - 4
Q803	D - 5	D818	E - 4
Q804	G - 8	D819	D - 3
Q1601	H - 6	D871	D - 5
Q1602	G - 6	D873	D - 4
Q1603	F - 13	D874	D - 3
Q1610	F - 5	D1602	H - 5
Q1611	G - 4	D1603	H - 6
Q2701	A - 9	D1604	F - 14
		D1605	F - 14
		D1609	G - 4
		D1611	H - 4
		D2701	A - 9
		D2702	A - 9

D

HV OUT, PIN OUT ROTATION AMP, AUDIO/VIDEO IN, AUDIO OUT JACK, DF DRIVE, QP OUT

D Board


1
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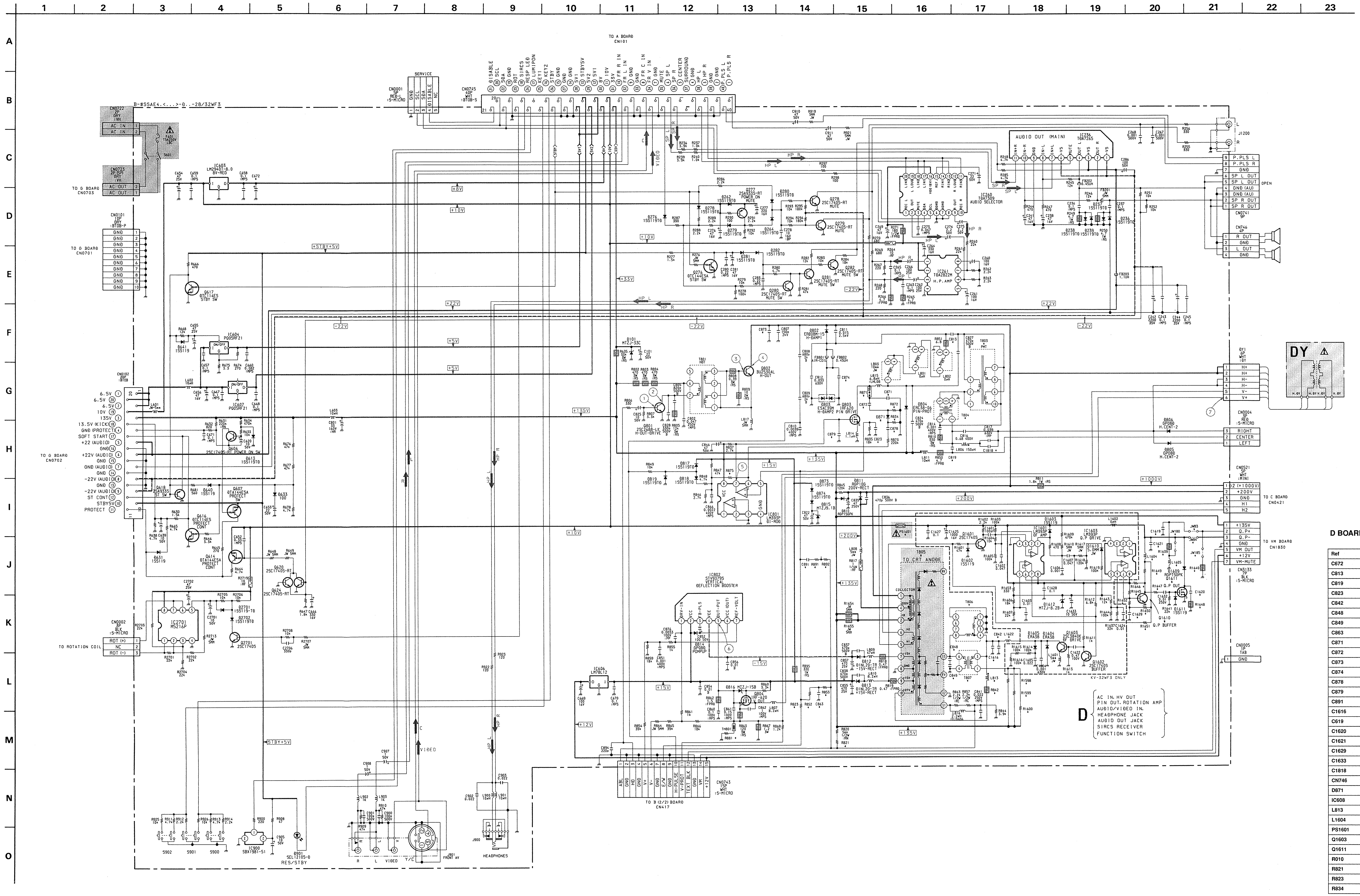
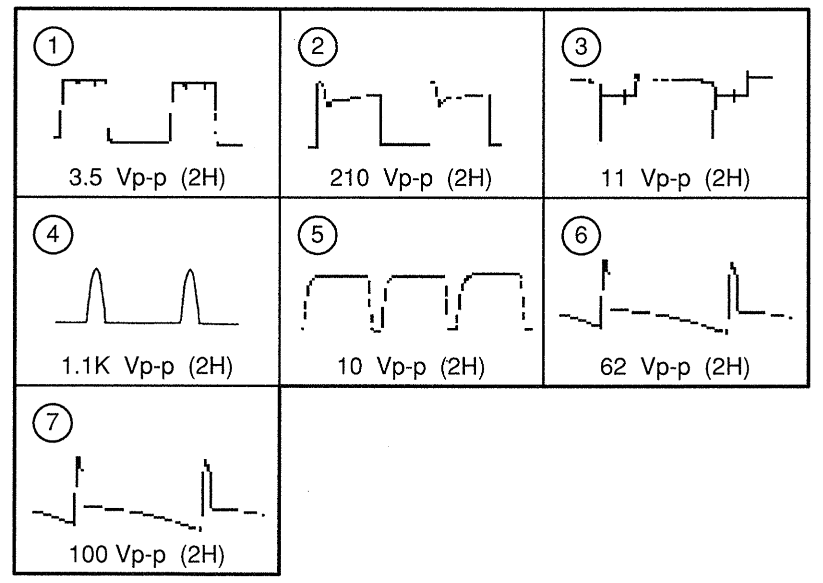
13
14
15
A
B
C
D
E
F
G
H
I
S601
CN0722
CN0723
AC OUT
AC IN
F601
T5AL250V
T5AH250V
1-663-209-14
CN0101
IC2701
T801
T802
T805
DF
Q801 H-OUT DRIVE
D802 H-OUT
CN0005
+ 22 V (AUDIO)
- 22 V (AUDIO)
GND (AUDIO)
CN0102
CN0004
135 V
CN0749
CN3133
CN0002
CN601
IC801
Q.P.
IC1601
IC1603
CN0743
CN0521
IC607
5V2
IC603
8V
IC604
5V1
IC602
V-OUT
IC606
12 V
15 V
+15 V
-15 V
IC236
IC261
IC260
HEADPHONE AMP.
CN0103
CN0740
CN0745
CN0741
CN0747
CN0748
CN0750
CN0001
Q1603
Q276
Q277
Q279
Q278
D
SONY
B
Y/C-3
HP


TO A BOARD CN101
SERVICE
CN0222 2P WHT AC IN
CN0723 2P AC OUT
TO G BOARD CN0703
TO G BOARD CN0701
TO G BOARD CN0702
TO ROTATION COIL
AUDIO OUT (MAIN)
J1200
CN746 4P
R OUT
L OUT
DY
CN0004 3P
RIGHT
CENTER
LEFT
TO C BOARD CN0421
TO VM BOARD CN1830
TO CRT ANODE
KV-32WF3 ONLY
TO B (2/2) BOARD CN417
HEADPHONES
D
AC IN, HV OUT
PIN OUT, ROTATION AMP
AUDIO/VIDEO IN,
HEADPHONE JACK
AUDIO OUT JACK
SIRCS RECEIVER
FUNCTION SWITCH

WAVEFORMS D BOARD



D BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q276	0.7	4.0	-
Q277	10.0	-	9.7
Q278	-1.3	-	-
Q279	-1.3	-	-1.3
Q280	0.4	0.7	-
Q281	0.7	-	-
Q282	0.7	-	-
Q801	-1.0	101.0	-
Q802	-	136.0	-
Q803	9.0	15.0	-
Q804	11.3	0.1	-1.3
Q606	0.5	4.8	0.3
Q607	4.8	1.6	4.8
Q613	13.5	-	-
Q614	10.0	9.0	10.0
Q616	0.7	-	-
Q617	0.7	3.5	-
Q618	3.5	-	-
Q620	-	10.0	-
Q624	-	10.0	-
Q2701	-	2.3	-
Q1610	-0.5	2.2	-
Q1611	0.2	43.4	-

D BOARD * MARK

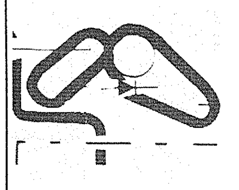
Ref	KV-28WF3	KV-32WF3	Ref	KV-28WF3	KV-32WF3
C672	-	47MF	R842	33	-
C813	0.68MF	0.82MF	R852	390K	JW 5.0MM
C819	0.022MF	0.033MF	R853	220K	180K
C823	0.01MF	0.1MF	R871	100K	-
C842	0.0047MF	-	R872	470K	-
C848	-	150PF	R875	3.3K	JW 5.0MM
C849	-	150PF	R881	4.7	22
C863	-	0.1MF	R891	-	47K
C871	0.0082MF	-	R892	-	JW 5.0MM
C872	0.1MF	-	R910		-
C873	-	330PF	R1598	47K	6.8K
C874	1000PF	0.0047MF	R1599	-	6.8K
C878	0.1MF	-	R1600	-	6.8K
C879	-	100PF	R1639	-	220
C891	-	0.002MF	R1640	-	1.5K
C1616	-	0.0018MF	R1645	68K	4.7K
C619	0.1MF	0.018MF	R1646	2.2K	680
C1620	JW 5.0MM	220PF	R1647	JW 5.0MM	560
C1621	0.01MF	0.0047MF	R1648	10K	JW 5.0MM
C1629	0.0068MF	-	R1649	10K	-
C1633	-	10MF	R1650	10K	-
C1818	-	0.0022MF	R1651	33	-
CN746	-	4P	R1652	2.2K	-
D871	1SS119-25TD	-	T803	1-246-897-11	1-247-776-11
IC608	-	LM2940T-8.0	T804	1-429-288-11	1-429-287-11
L813	0UH	-	T805	NX-4003	NX-4123
L1604	0UH	-	T806	DFT	-
PS1601	JW 5.0MM	LINK IC	T807	-	DFT
Q1603	-	2SC3840(3)	JW83	-	JW 5.0MM
Q1611	2SC4793	IRF620	JW84	-	JW 5.0MM
R010	-	47K	JW180	JW 5.0MM	-
R821	6.8K	JW 5.0MM	JW185	-	JW 5.0MM
R823	1.8K	3.3K			
R834	220K	-			

G BOARD * MARK

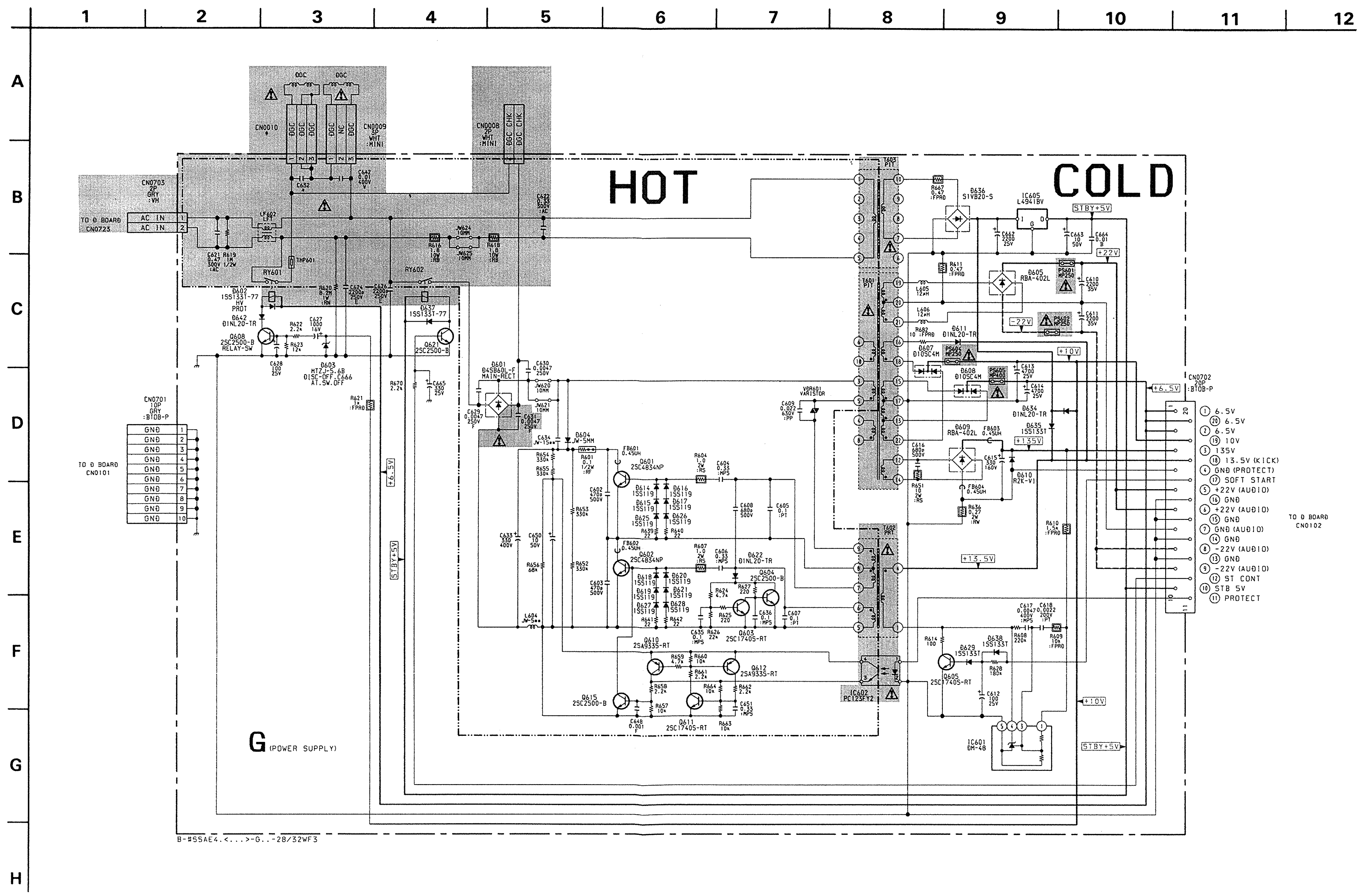
Ref	28WF3A	28WF3B	28WF3D	28WF3E	28WF3K	32WF3A	32WF3B	32WF3D	32WF3E	32WF3K
C632	JW 10MM	JW 10MM	JW 10MM	JW 10MM	JW 10MM	0.01MF	0.01MF	0.01MF	0.01MF	0.01MF
CN0010	-	-	-	-	-	3P	3P	3P	3P	3P

G BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q601	-1.6	-	-
Q602	0.2	293.0	-
Q603	0.6	0.1	-
Q604	0.1	1.4	-
Q605	0.1	11.0	-0.1
Q608	-	4.8	-0.1
Q610	22.0	-2.3	26.8
Q611	-1.6	26.6	-
Q612	26.7	-1.1	26.8
Q615	-2.6	-1.5	-
Q621	0.6	-	-0.1



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.


1
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7
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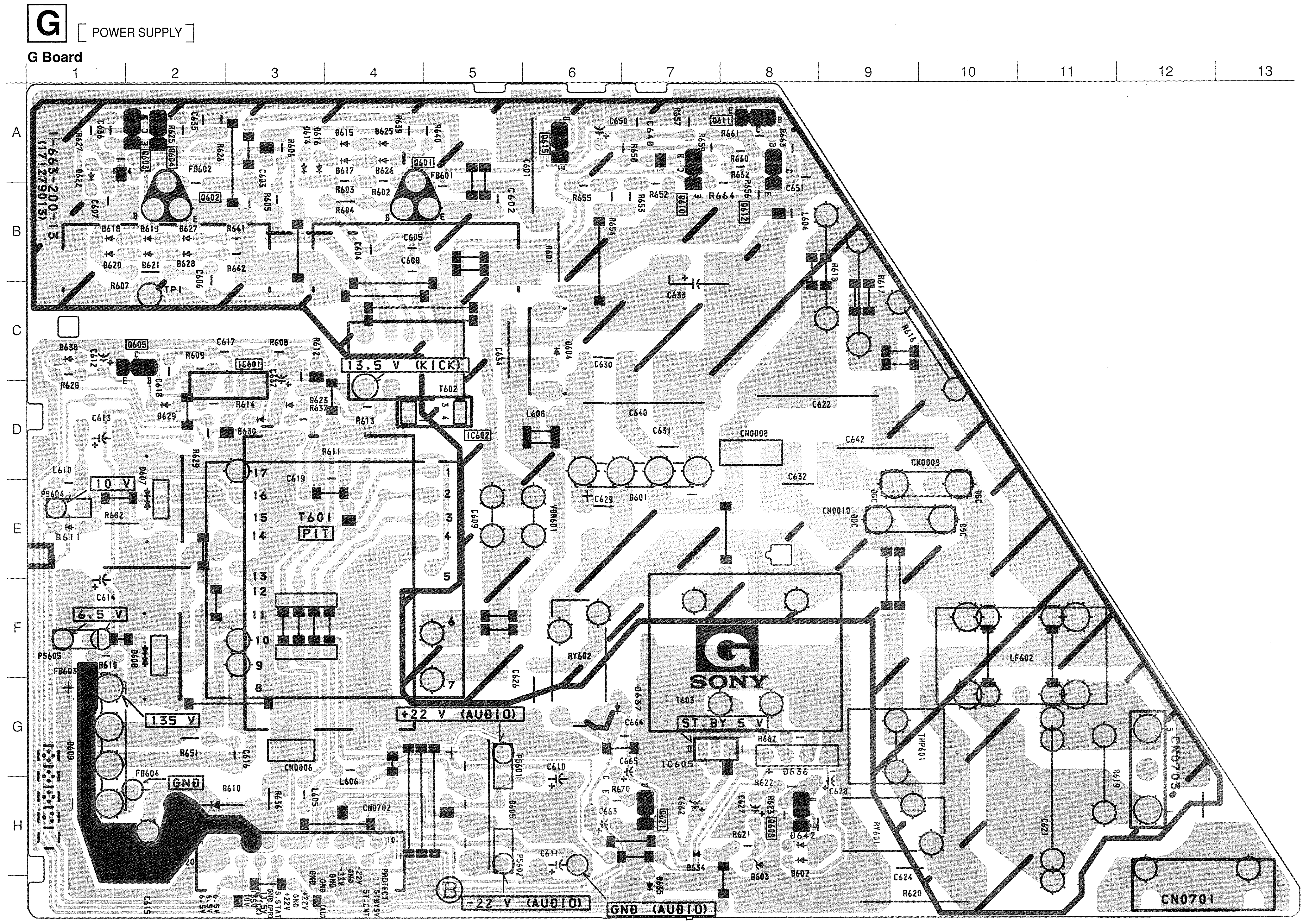
9
10
11
12
A
B
C
D
E
F
G
H
HOT
COLD
G (POWER SUPPLY)

G BOARD

IC	
IC601	C - 3
IC602	D - 5
IC603	G - 7
TRANSISTOR	
Q601	A - 5
Q602	B - 2
Q603	B - 2
Q604	B - 2
Q605	C - 1
Q608	H - 8
Q610	B - 7
Q611	A - 8
Q612	B - 8
Q615	A - 6
Q621	H - 7
DIODE	
D601	E - 7
D602	H - 8
D603	H - 8
D605	H - 5
D607	E - 2
D608	F - 2
D609	G - 1
D610	H - 3
D611	E - 1
D614	A - 3
D615	A - 4
D616	A - 3
D617	A - 4
D618	B - 1
D619	B - 2
D620	B - 1
D621	B - 2
D622	A - 1
D623	D - 3
D625	A - 4
D626	A - 4
D627	B - 2
D628	B - 2
D629	D - 2
D630	D - 3
D633	G - 7
D634	H - 7
D636	G - 8


G [POWER SUPPLY]
G Board
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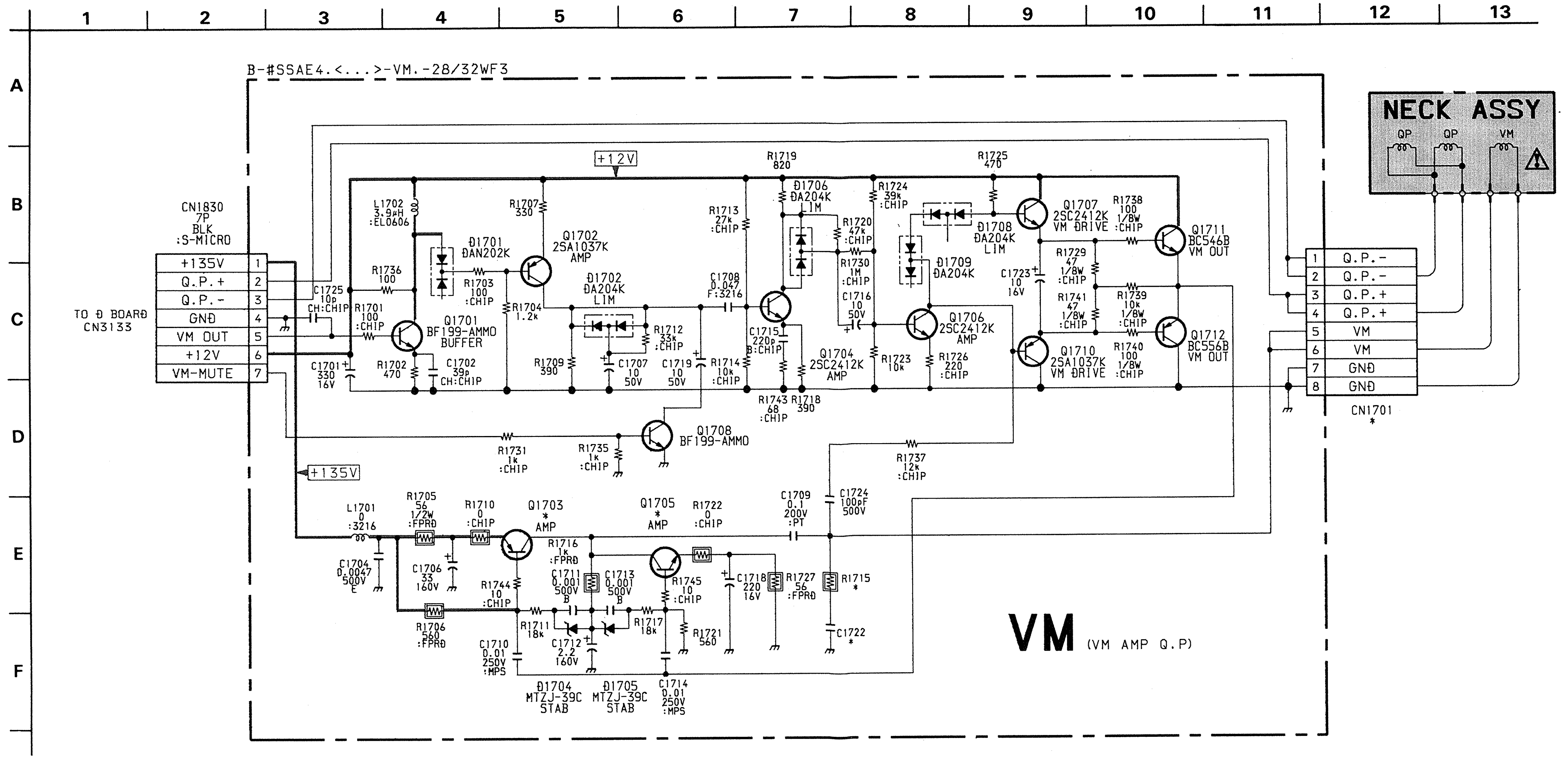
12
13
A
B
C
D
E
F
G
H
13.5 V (KICK)
10 V
T601 PIT
6.5 V
135 V
+22 V (AUDIO)
ST.BY 5 V
GND
-22 V (AUDIO)
GND (AUDIO)
SONY
CN0701


1
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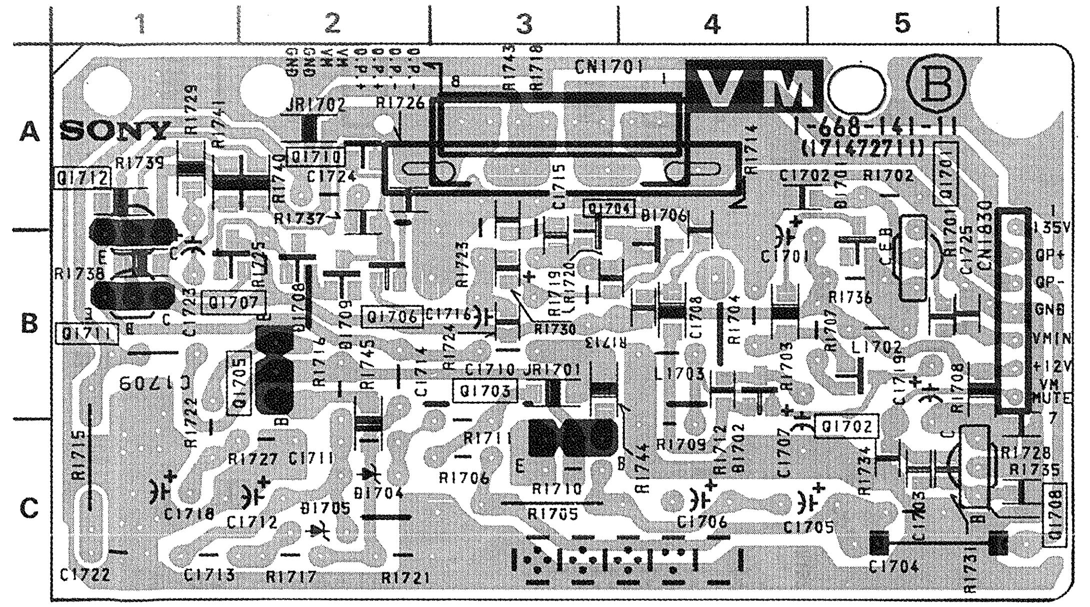
11
12
13
A
B
C
D
E
F
B-#SSAE4.<...>-VM.-28/32WF3
TO Ð BOARD CN3133
CN1830 7P BLK :S-MICRO
+135V 1
Q.P.+ 2
Q.P.- 3
GNÐ 4
VM OUT 5
+12V 6
VM-MUTE 7
+12V
+135V
L1702 3.9μH :EL0606
Ð1701 ÐAN202K
R1707 330
Q1702 2SA1037K AMP
R1736 100
R1703 100 :CHIP
R1704 1.2k
C1725 10p CH:CHIP
R1701 100 :CHIP
Q1701 BF199-AMMO BUFFER
C1701 330 16V
R1702 470
C1702 39p CH:CHIP
Ð1702 ÐA204K LIM
R1712 33k :CHIP
R1709 390
C1707 10 50V
C1719 10 50V
R1713 27k :CHIP
C1708 0.047 F:3216
R1714 10k :CHIP
C1715 220p B:CHIP
R1743 68 :CHIP
R1718 390
Q1704 2SC2412K AMP
R1719 820
Ð1706 ÐA204K LIM
R1720 47k :CHIP
R1730 1M :CHIP
C1716 10 50V
R1724 39k :CHIP
R1723 10k
Q1706 2SC2412K AMP
R1726 220 :CHIP
Ð1709 ÐA204K
R1725 470
Ð1708 ÐA204K LIM
Q1707 2SC2412K VM ÐRIVE
R1738 100 1/8W :CHIP
Q1711 BC546B VM OUT
C1723 10 16V
R1729 47 1/8W :CHIP
R1741 47 1/8W :CHIP
R1739 10k 1/8W :CHIP
R1740 100 1/8W :CHIP
Q1710 2SA1037K VM ÐRIVE
Q1712 BC556B VM OUT
R1731 1k :CHIP
R1735 1k :CHIP
Q1708 BF199-AMMO
R1737 12k :CHIP
L1701 0 :3216
C1704 0.0047 500V E
R1705 56 1/2W :FPRÐ
C1706 33 160V
R1706 560 :FPRÐ
R1710 0 :CHIP
Q1703 * AMP
R1744 10 :CHIP
R1716 1k :FPRÐ
C1711 0.001 500V B
C1713 0.001 500V B
R1711 18k
C1712 2.2 160V
C1710 0.01 250V :MPS
Ð1704 MTZJ-39C STAB
Ð1705 MTZJ-39C STAB
Q1705 * AMP
R1722 0 :CHIP
R1745 10 :CHIP
R1717 18k
R1721 560
C1714 0.01 250V :MPS
C1718 220 16V
R1727 56 :FPRÐ
C1709 0.1 200V :PT
C1724 100pF 500V
R1715 *
C1722 *
NECK ASSY
QP
QP
VM
1 Q.P.-
2 Q.P.-
3 Q.P.+
4 Q.P.+
5 VM
6 VM
7 GNÐ
8 GNÐ
CN1701 *
VM (VM AMP Q.P)

VM BOARD * MARK

Ref	28WF3A	28WF3B	28WF3D	28WF3E	28WF3K	32WF3A	32WF3B	32WF3D	32WF3E	32WF3K
C1722	100PF	100PF	100PF	100PF	100PF	JW 5.0MM	JW 5.0MM	JW 5.0MM	JW 5.0MM	JW 5.0MM
Q1703	2SA1837	2SA1837	2SA1837	2SA1837	2SA1837	-	-	-	-	-
Q1705	2SC4793	2SC4793	2SC4793	2SC4793	2SC4793	-	-	-	-	-
R1715	330	330	330	330	330	220	220	220	220	220

VM [VM AMP, QP]

VM Board


1
2
3
4
5
A
B
C
SONY
CN1701
VM
B
1-668-141-11
(1714727111)
+135V
QP+
QP-
GND
VMOUT
+12V
VM MUTE
Q1712
Q1710
Q1707
Q1711
Q1706
Q1703
Q1705
Q1702
Q1704
Q1701
D1706
D1704
D1705
C1722
C1713
R1717
R1721
C1718
C1712
C1704
R1731

VM BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q1701	0.8	0.7	2.1
Q1702	1.8	0.2	1.9
Q1703	24.0	13.3	24.0
Q1704	0.5	1.2	0.4
Q1705	0.1	12.3	-
Q1706	0.4	1.1	0.3
Q1707	1.5	2.1	1.4
Q1708	-	-	-
Q1710	1.1	-	1.2
Q1711	1.4	2.1	1.3
Q1712	1.3	1.2	-

VM BOARD

TRANSISTOR	
Q1701	A - 5
Q1702	C - 5
Q1703	B - 3
Q1705	B - 2
Q1706	B - 2
Q1707	B - 1
Q1708	C - 6
Q1710	A - 2
Q1711	B - 1
Q1712	A - 1
DIODE	
D1701	A - 5
D1702	C - 4
D1704	C - 2
D1705	C - 2
D1706	A - 4
D1708	B - 2
D1709	B - 2

B [A/D, D/A CONVERTER, DIGITAL NOISE REDUCER, CRT DRIVER, DEFLECTION PROCESSOR]

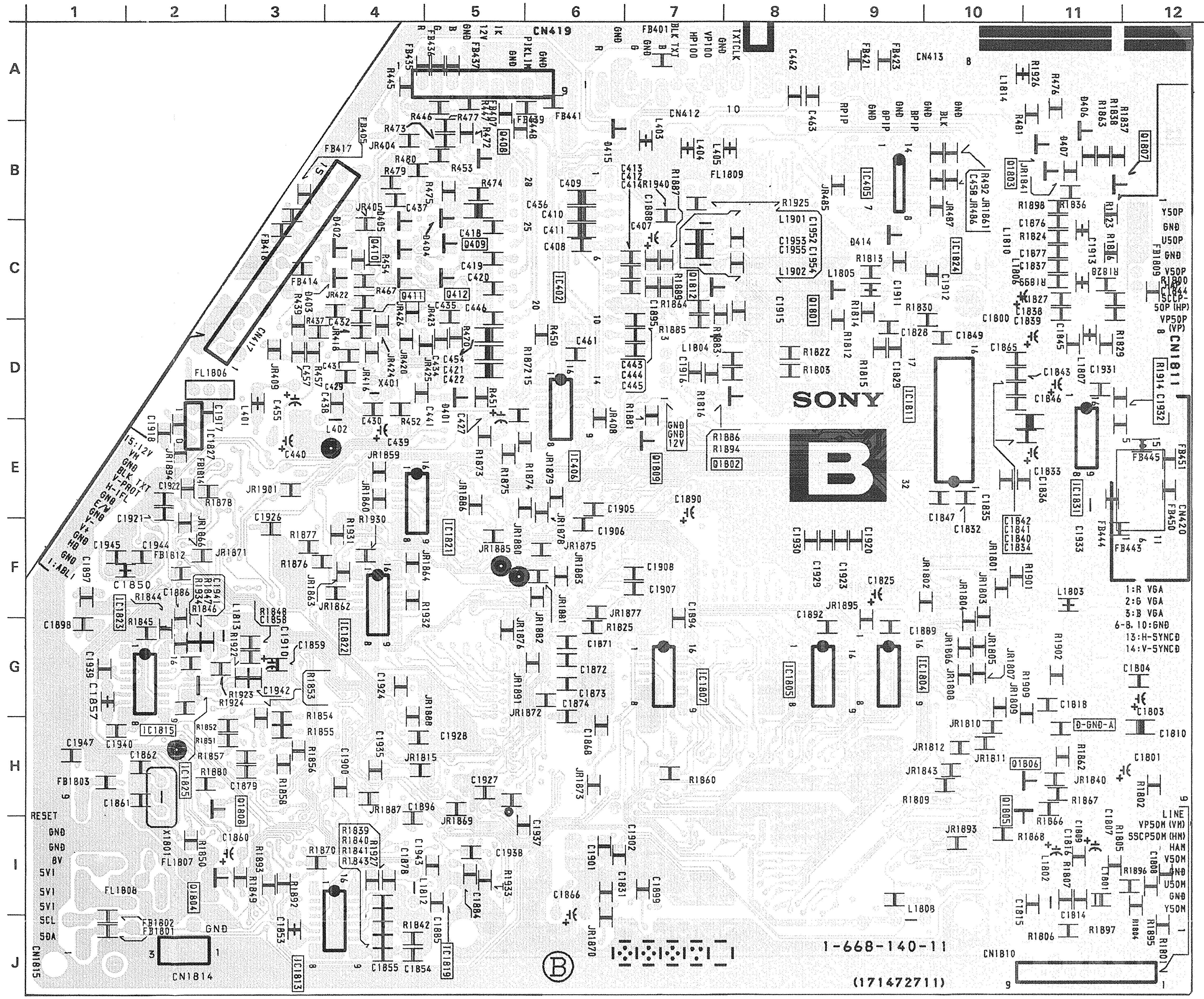
B BOARD

IC	
IC402	C - 6
IC403	D - 20
IC405	B - 9
IC406	E - 6
IC1801	G - 13
IC1803	I - 17
IC1808	H - 19
IC1809	E - 15
IC1810	I - 21
IC1812	F - 24
IC1814	F - 21
IC1815	H - 2
IC1816	H - 22
IC1817	E - 19
IC1821	F - 5
IC1822	G - 4
IC1823	F - 1
IC1824	C - 10
IC1825	H - 2

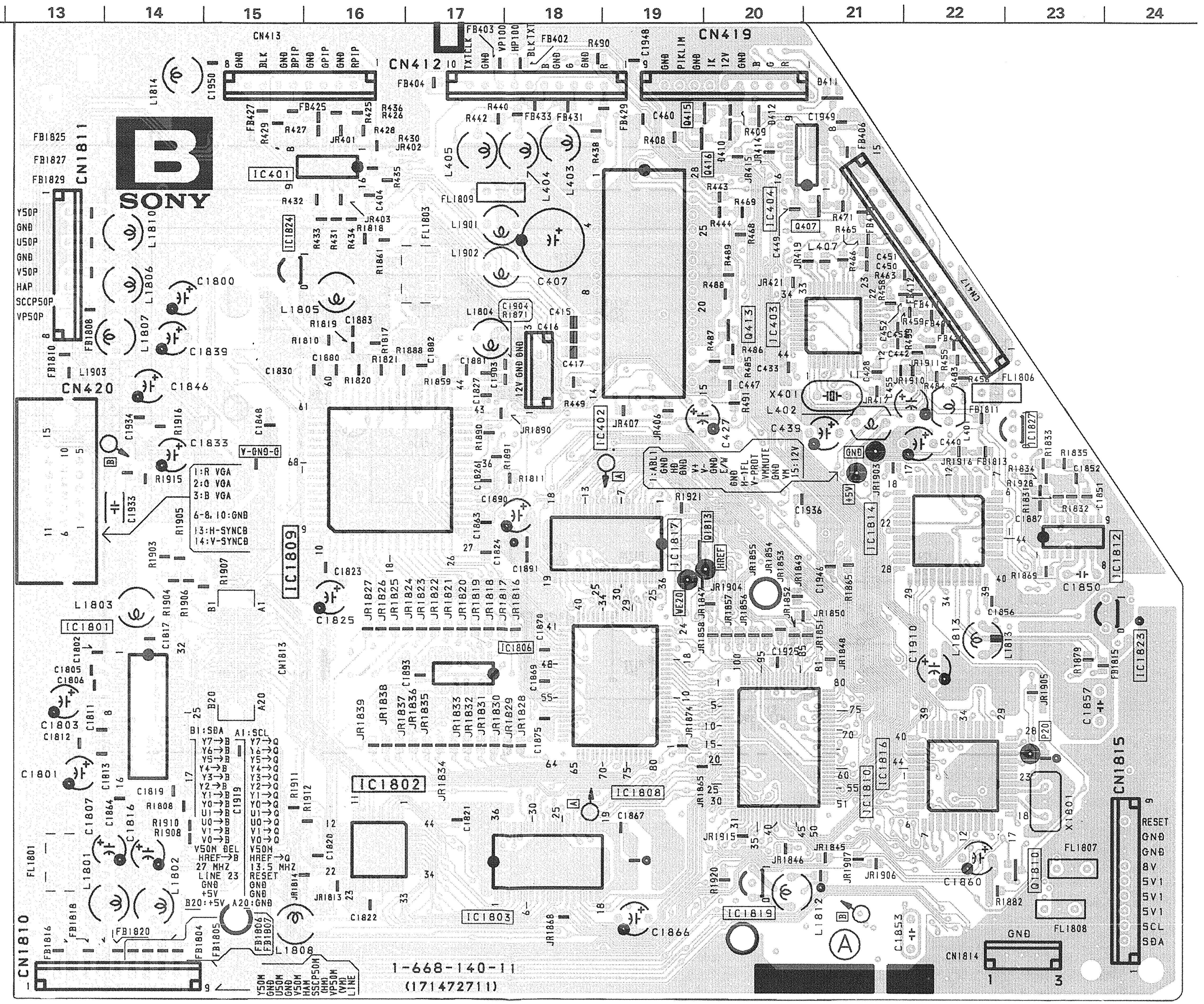
TRANSISTOR	
Q411	C - 4
Q412	C - 5
Q415	A - 19
Q416	B - 20
Q1801	C -8
Q1802	D - 8
Q1804	I - 2
Q1805	H -10
Q1808	H - 2
Q1809	E - 7
Q1810	I - 23
Q1812	C - 8

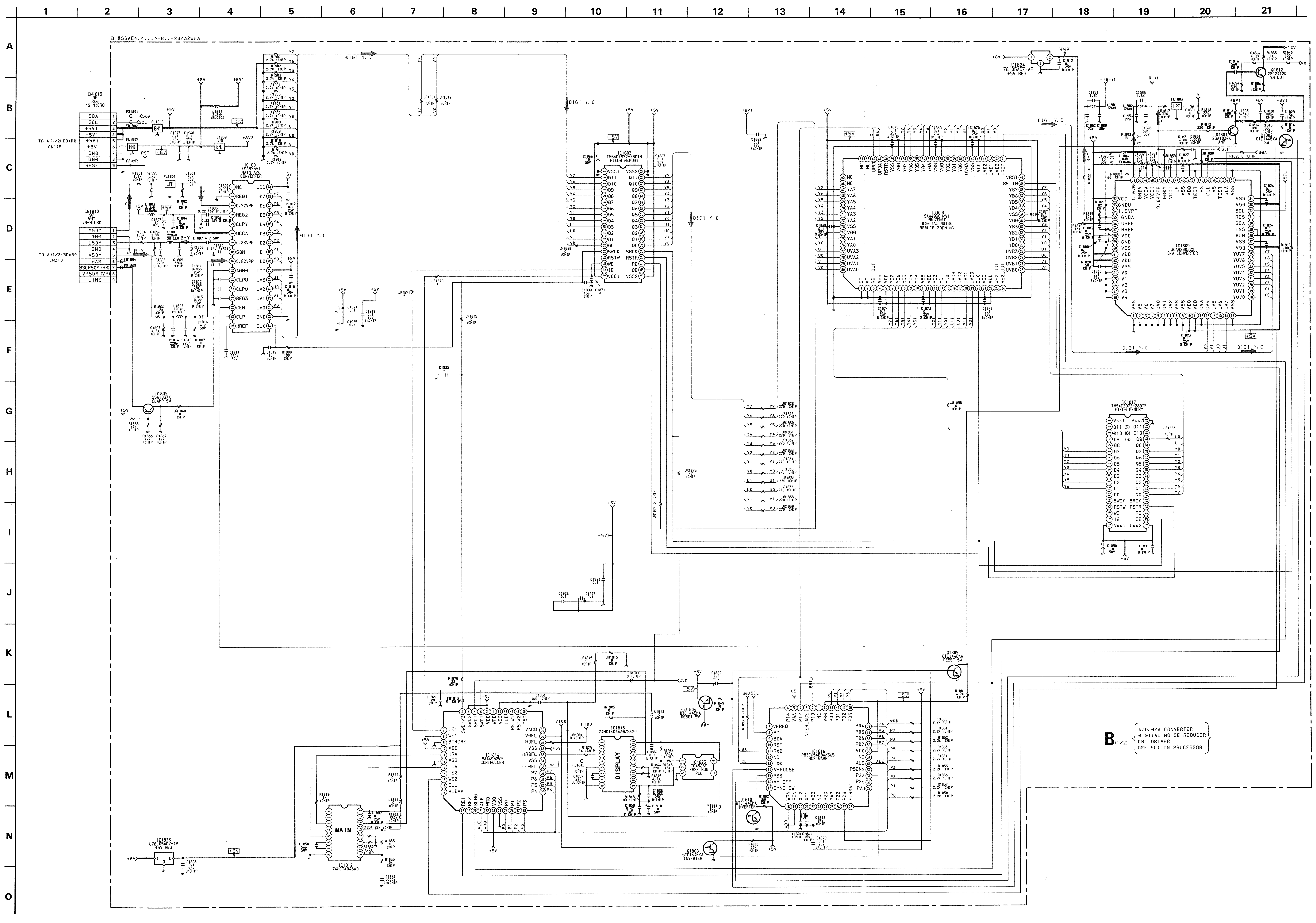
DIODE	
D401	D - 5
D402	C - 3
D403	C - 3
D410	B - 20
D411	A - 21
D412	A - 20
D414	C - 9
D415	B - 7

B Board < Conductor Side >


SONY
B
CN419
CN412
CN413
CN1811
CN1814
CN1810
1-668-140-11
(171472711)

B Board < Component Side >


B
SONY
CN413
CN412
CN419
CN1811
CN420
CN1815
CN1810
CN1814
IC1809
IC1802
1-668-140-11
(171472711)


B-#SSAE4.<...>-B..-28/32WF3
CN1815 9P RED :S-MICRO
SDA
SCL
+5V1
+5V1
+5V1
+8V
GND
GND
RESET
TO A (1/2) BOARD CN115
CN1810 9P WHT :S-MICRO
Y50M
GND
U50M
GND
V50M
HAM
SSCP50M (HM)
VP50M (VM)
LINE
TO A (1/2) BOARD CN310
IC1801 TDA8755T MAIN A/D CONVERTER
IC1803 TMS4C2972-28DTR FIELD MEMORY
IC1808 SAA4990H/V1 PROZONIC DIGITAL NOISE REDUCE ZOOMING
IC1809 SDA9280B22 D/A CONVERTER
IC1817 TMS4C2972-28DTR FIELD MEMORY
IC1824 L78LO5ACZ-AP +5V REG
Q1801 2SA1037K AMP
Q1802 DTC144EKA SW
Q1812 2SC2412K RM OUT
Q1805 2SA1037K CLAMP SW
IC1814 SAA4952WP CONTROLLER
IC1815 74HCT4046AD/S470
DISPLAY
IC1825 TC4S66F FREE RUN PLL
IC1816 P83C654EBA/565 SOFTWARE
Q1804 DTC144EKA RESET SW
Q1809 DTC144EKA RESET SW
Q1810 DTC144EKA INVERTER
Q1808 DTC144EKA INVERTER
IC1812 74HCT4046AD
MAIN
IC1823 L78LO5ACZ-AP +5V REG
DIGI Y, C
B(1/2)
A/D, D/A CONVERTER
DIGITAL NOISE REDUCER
CRT DRIVER
DEFLECTION PROCESSOR

B BOARD * MARK

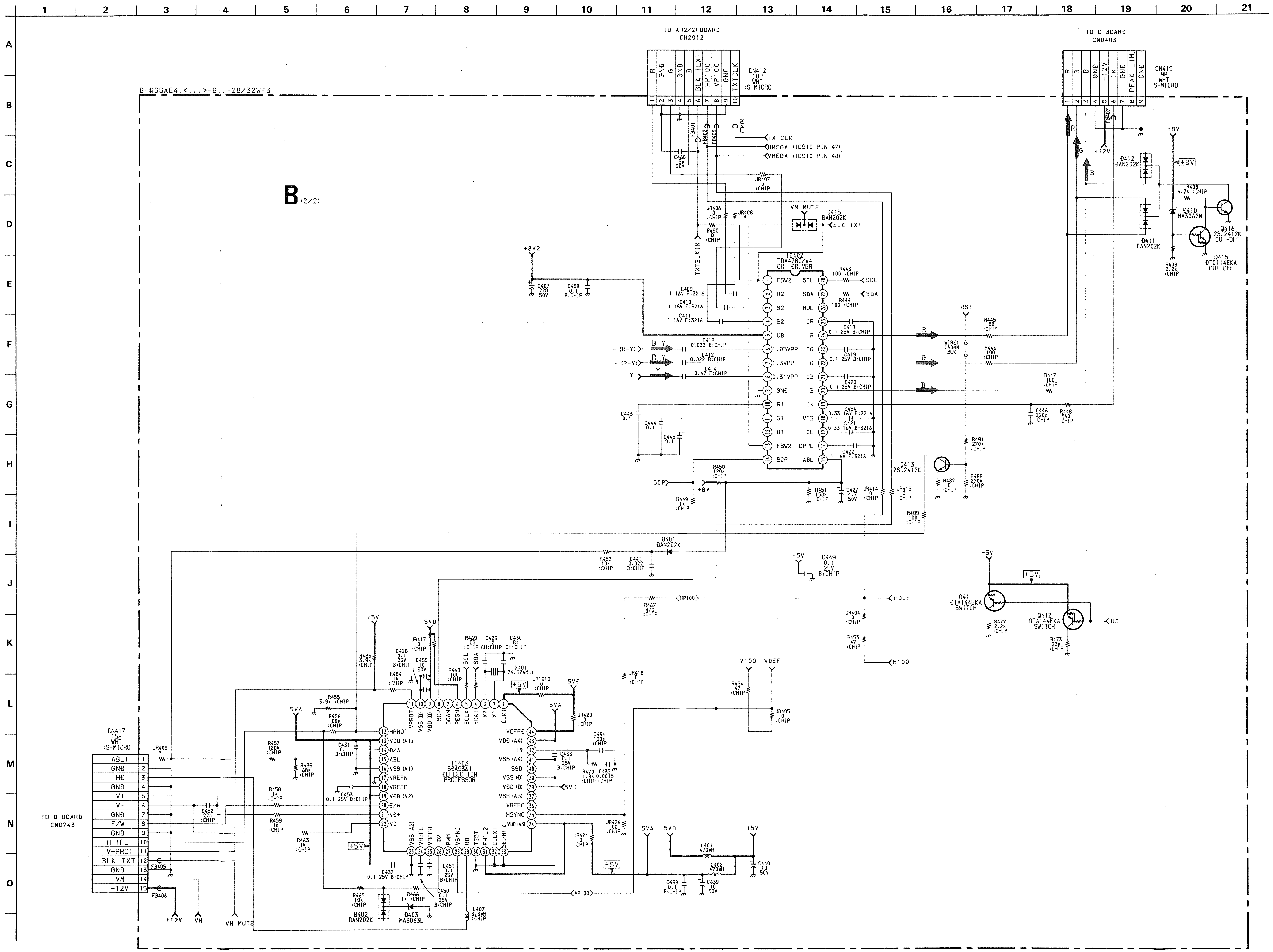
Ref	KV-28WF3A, KV-28WF3B, KV-28WF3D, KV-28WF3E, KV-28WF3K	KV-32WF3A, KV-32WF3B, KV-32WF3D, KV-32WF3E, KV-32WF3K
C442	0.1MF	-
C457	0.01MF	-
C1831	220PF	-
C1935	15PF	-
JR408	SHORT 0	-
JR409	1K	SHORT 0

B (1/2) BOARD
IC VOLTAGE TABLE

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC1812	3 - 4	2.4
	6 - 7	0.7
	9	4.6
	11 - 13	4.7
	14	0.3
	16	5.0
IC1813	3 - 4	2.4
	6 - 7	0.7
	9	4.6
	11 - 13	4.7
	14	0.3
	16	5.0
IC1815	1	5.0
	2	2.3
	3 - 4	2.5
	6 - 7	0.8
	9 - 11	3.0
	12	4.5
	13	3.0
	14	0.4
	15	0.2
	16	5.2
IC1821	2	2.5
	4 - 5	2.3
	12	2.0
	14	2.0
	15	2.6
	16	8.0
IC1822	2	2.9
	4 - 5	2.6
	12	2.3
	14	2.1
	15	2.8
	16	8.0

B BOARD
TRANSISTOR VOLTAGE TABLE

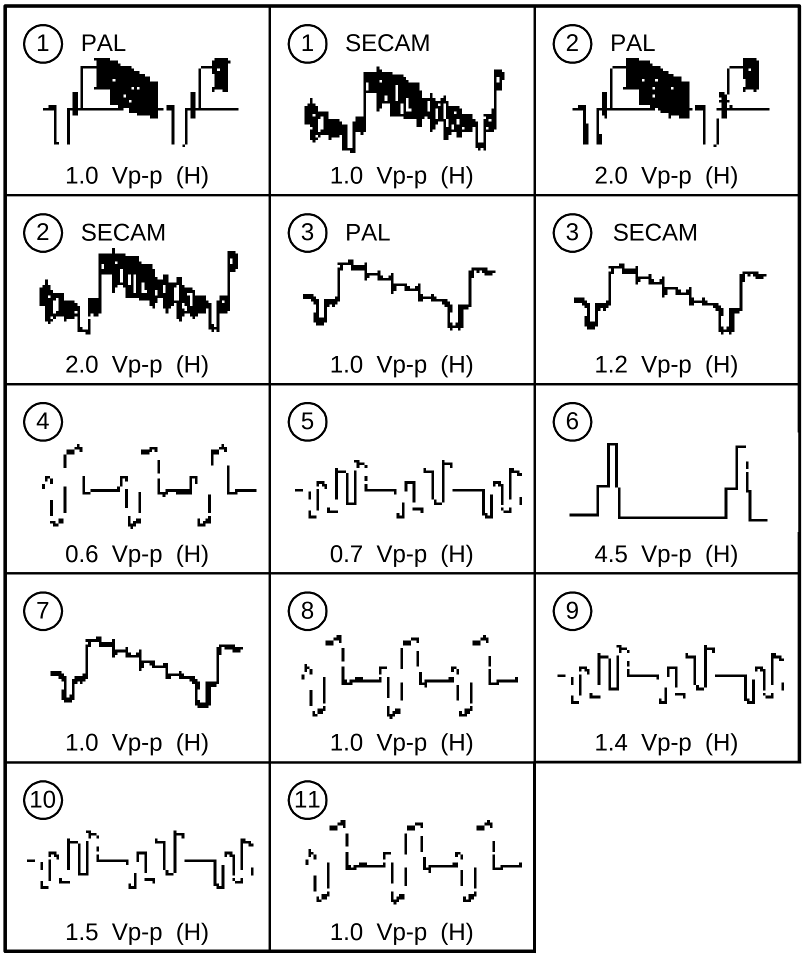
Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q411	0.1	4.8	4.8
Q412	0.1	4.8	4.8
Q415	1.8	0.1	-
Q416	0.1	5.6	-
Q1801	0.1	-	0.9
Q1802	4.0	0.1	0.1
Q1804	0.3	4.8	0.1
Q1805	2.5	1.3	0.7
Q1807	2.5	1.3	0.7
Q1808	0.1	4.7	0.1
Q1809	0.1	0.1	0.1
Q1810	0.1	4.8	-
Q1812	0.5	10.5	-
Q1813	0.1	3.7	0.1


B (2/2)
B-#SSAE4.<...>-B..-28/32WF3
TO A (2/2) BOARD
CN2012
CN412
10P
WHT
:S-MICRO
R
GND
G
GND
B
BLK TEXT
HP100
VP100
GND
TXTCLK
TO C BOARD
CN0403
CN419
9P
WHT
:S-MICRO
+12V
Ik
PEAK LIM
TXTCLK
HMEGA (IC910 PIN 47)
VMEGA (IC910 PIN 48)
TXTBLKIN
VM MUTE
D415
DAN202K
BLK TXT
IC402
TDA4780/V4
CRT DRIVER
FSW2
R2
G2
B2
UB
1.05VPP
1.3VPP
0.31VPP
GND
R1
G1
B1
SCP
SCL
SDA
HUE
CR
CG
CB
VFB
CL
CPPL
ABL
-(B-Y)
-(R-Y)
Y
+8V2
RST
WIRE1
160MM
BLK
Q413
2SC2412K
+8V
D412
DAN202K
D411
DAN202K
D410
MA3062M
Q416
2SC2412K
CUT-OFF
Q415
DTC114EKA
CUT-OFF
D401
DAN202K
HP100
HDEF
H100
V100
VDEF
Q411
DTA144EKA
SWITCH
Q412
DTA144EKA
SWITCH
UC
+5V
5VD
5VA
X401
24.576MHz
IC403
SDA9361
DEFLECTION
PROCESSOR
HPROT
VDD (A1)
Ø/A
ABL
VSS (A1)
VREFN
VREFP
VDD (A2)
E/W
VD+
VD-
VSS (A2)
VREFL
VREFH
BZ
PWM
VSYNC
HD
TEST
FH1_2
CLEXT
SELFH1_2
VDD (A3)
HSYNC
VREFC
VSS (A3)
VDD (D)
VSS (D)
SSD
VSS (A4)
PF
VDD (A4)
VOFFD
CLK1
X1
X2
SDAT
SCLK
RESN
SCAN
SCP
VDD (D)
VSS (D)
VPROT
CN417
15P
WHT
:S-MICRO
TO D BOARD
CN0743
ABL1
GND
HD
V+
V-
E/W
H-1FL
V-PROT
BLK TXT
VM
+12V
FB405
FB406
VM MUTE
VP100
L401
470μH
L402
470μH
D402
DAN202K
D403
MA3033L
L407
3.3μH
:CHIP

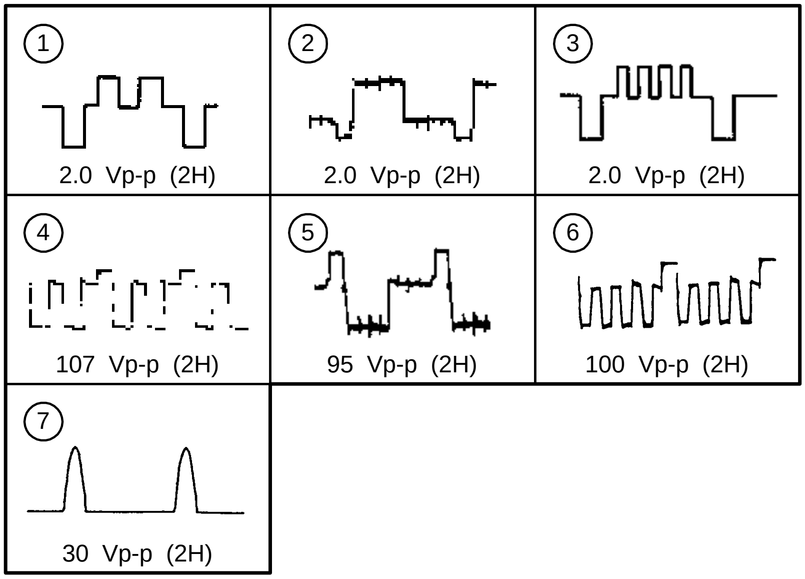
B (2/2) BOARD
IC VOLTAGE TABLE

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC402	2 - 4	5.0
	5	7.8
	6 - 7	4.0
	8	3.7
	10 - 12	5.0
	14	0.7
	16	4.7
	17	5.1
	18	1.8
	19	7.5
	20	2.5
	21	3.3
	22	2.8
	23	3.3
	24	2.9
	25	3.3
	27	4.0
	28	3.8
IC405	5	3.2
	9	3.2
	13 - 14	3.2
IC406	16	4.8

WAVEFORMS A BOARD

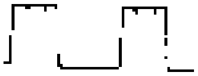


WAVEFORMS C BOARD



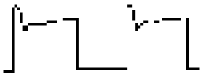
WAVEFORMS D BOARD

①



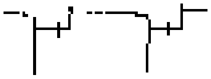
3.5 Vp-p (2H)

②



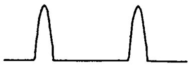
210 Vp-p (2H)

③



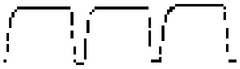
11 Vp-p (2H)

④



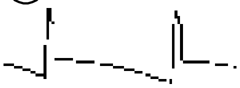
1.1K Vp-p (2H)

⑤



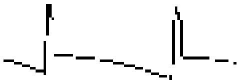
10 Vp-p (2H)

⑥



62 Vp-p (2H)

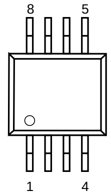
⑦



100 Vp-p (2H)

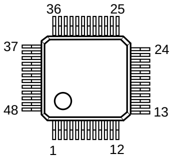
5-4 SEMICONDUCTORS

BA7046F
BA7046F-T1
MB3793-42NF
MB3793-42NF-ER
NJM2240M
NJM2240M(TE2)



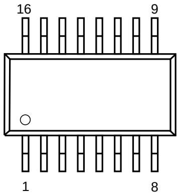
(TOP VIEW)

CXA1855Q-T6


36
25
37
24
48
13
1
12

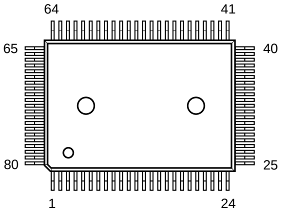
(TOP VIEW)

CXA1875AM-T4
HE4053BT
MC14052BDR2
MC74F157ADR2
SN74LS221D
74HCT4046AD/S470



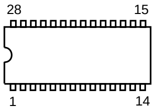
(TOP VIEW)

CXD2044Q-TL
SAA4990H/V2


64
41
65
40
80
25
1
24

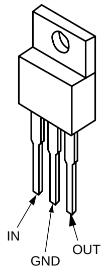
(MARKING SIDE VIEW)

CXD2053S
TDA4780/V3

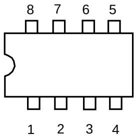


(TOP VIEW)

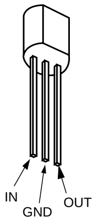
LM2940CT-9.0
LM2940T-8.0
LM2940T-9.0
L4941BV
TEA7605



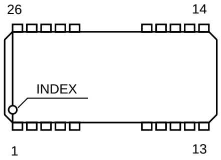
LM393P
M5216P
ST24C16FB6
TDA2822M
UPC393C



LM78L05ACZ
LM78L12ACZ
L78L05ACZ-AP
L78L12ACZ-AP

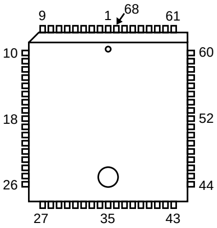


MB814400C-70PJN-ER


26
14
INDEX
1
13

(TOP VIEW)

MSP3400C-PS-C6-T
MSP3410B-PS-F7-T-ND
SAA7185WP
SDA30C164-2-GEG
SDA5275


9
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68
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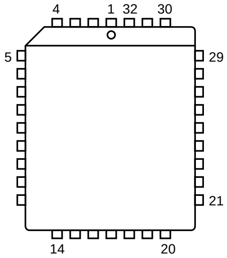
35
43

(TOP VIEW)

M27C4001-15C1-AE406
M27C4001-15C1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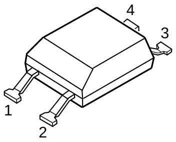
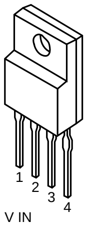
21
14
20

(TOP VIEW)

PC123F2
PC123FY2

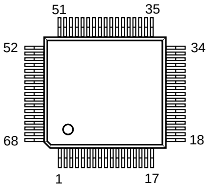


PQ05RF21



1 : V IN
2 : V OUT
3 : GND
4 : ON/OFF CONTROL

P83C654EBA/565
SDA9280A41


51
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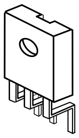
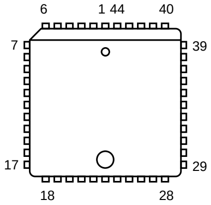
18
1
17

(TOP VIEW)

SBX1981-51



SAA4952WP/V1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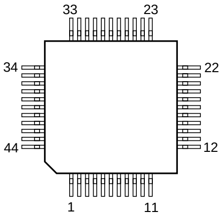
28

(TOP VIEW)

SDA9361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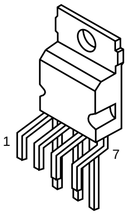
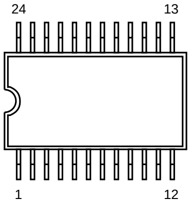
STV9379

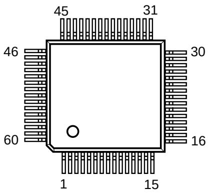


TC9293F-EL



(TOP VIEW)

TC9337F-015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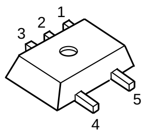
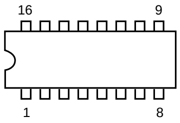
60
16
1
15

(MARKING SIDE VIEW)

TC4S66F
TC4S66F-TE85L

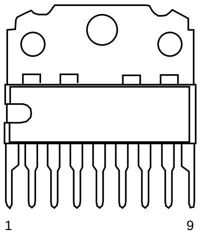


TDA4665T-T

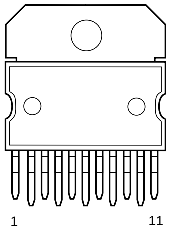


(TOP VIEW)

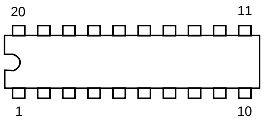
TDA6111Q
TDA6111Q/N4



TDA7265

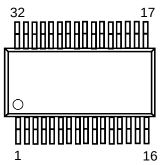


TDA7309



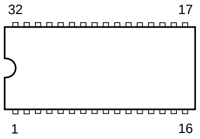
(TOP VIEW)

TDA8755T-T



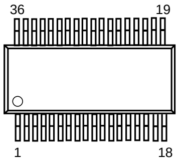
(TOP VIEW)

TDA9143/N2
TDA9144/N2
TDA9170T



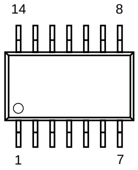
(TOP VIEW)

TMS4C2972-26DTR
TMS4C2972-28DTR



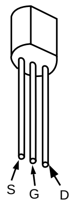
(TOP VIEW)

U2860B-BFPG3
74LVC08D

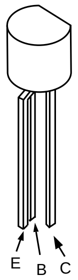


(TOP VIEW)

BC546B
BC556B



BF199
BF199-AMMO



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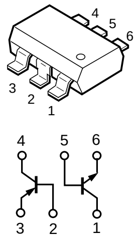
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5
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3
2
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4
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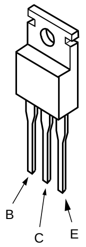
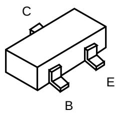
6
3
2
1

IRF614
IRF620



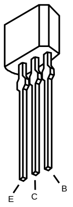
DTA144EK
DTA144EK-T146
DTC114EK
DTC114EKA-T146
DTC123EK
DTC123EK-T146
DTC124EKA-T146

DTC144EK
DTC144EK-T146
2SA1037K-T-146-R
2SA1162-G
2SC2412K-QR
2SC2412K-T-146-R

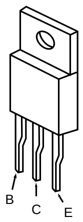


JA101TP-Q
DTA144ESA
DTA144ESA-TP
DTC114ESA-TP
DTC144ESA-TP
2SA1175-HFE

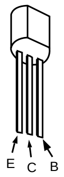
2SA733-K
2SA933AS-RT
2SA933AS-QRT
2SA933S-RT
2SC1740S-RT
2SC2785-HFE



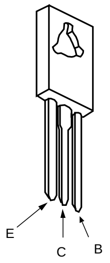
2SA1837



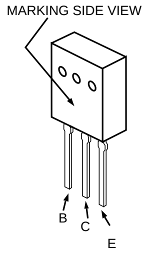
2SC2500-B
2SC2551-O
2SC2551O-TPE2



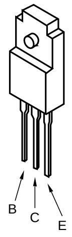
2SC2688-LK
2SC3840K



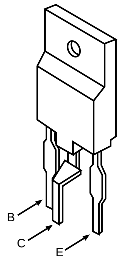
2SC3997CA


MARKING SIDE VIEW
B
C
E

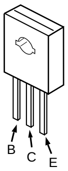
2SC4793



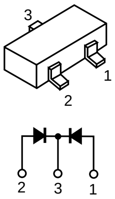
2SC4834NP-F09



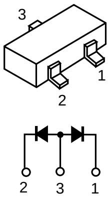
2SD2396H



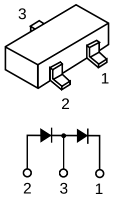
DAN202K
DAN202K-T-146



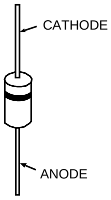
DAP202K
DAP202K-T-146



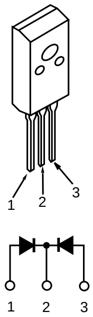
DA204K
DA204K-T-146



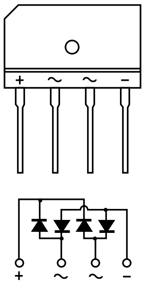
D1NL20
D1NL20-TA
D1NL20-TR
EGP20G
EL1Z
GP08D
GP08DPKG23
MTZJ-T-77-9.1
MTZJ-T-77-9.1A
R2K-V1
RGP02-20EG23
RGP02-20EL-6394
RGP10GPKG23
RGP15GPKG23
S2LA20F
1SS133T-77
1SS83
1SS83TD


CATHODE
ANODE

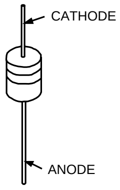
D10SC4M



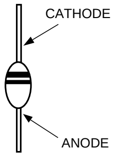
D4SB60L
D4SB60L-F
RBA-402L



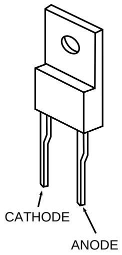
ERA38-06
ERA38-06TP1
MTZJ-T-77-13B
MTZJ-T-77-15B
MTZJ-T-77-2.2A
MTZJ-T-77-33C
MTZJ-T-77-39C
MTZJ-T-77-5.6B
MTZJ-T-77-8.2B
MTZJ-T-77-9.1B
MTZJ-13B
MTZJ-33C
MTZJ-39C
RD15ES-B2
RD5.6ESB2
RD8.2ES-B2
RD9.1ESB2
1SS119-25
1SS119-25TD


CATHODE
ANODE

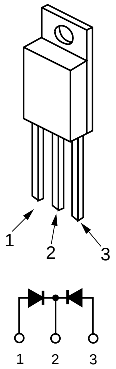
ERC38-06


CATHODE
ANODE

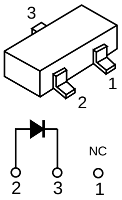
ERD08M-15


CATHODE
ANODE

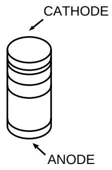
ESAC39M-06C
ESAC39M-06CF38



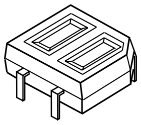
MA3033-L
MA3033L-TX
MA3056M-TX
MA3062M-TX
MA3030-H-(TX)
RD5.6M-B2



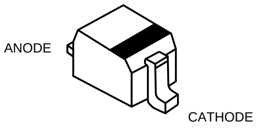
MA3051L-TX


CATHODE
ANODE

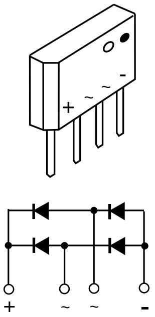
MA73-TX



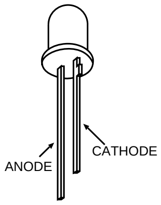
RD12SB2
UDZ-TE-17-12B


ANODE
CATHODE

S1VB20-S
S1VB40

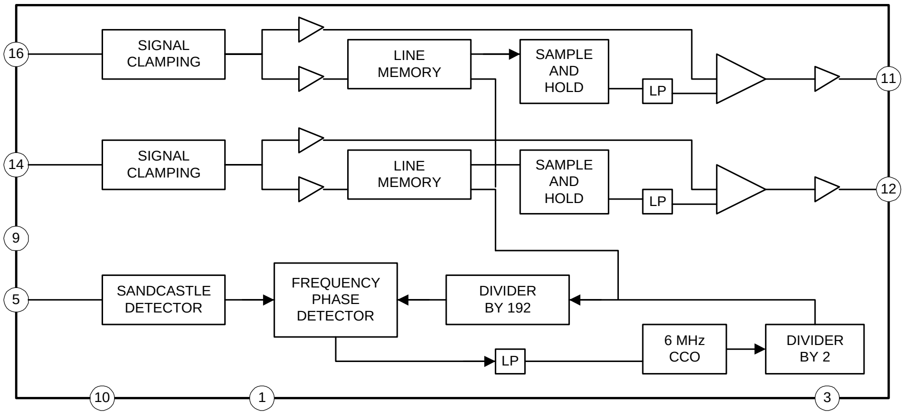


SLA-570KT3F


ANODE
CATHODE

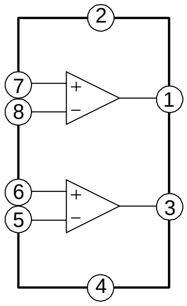
5-5. IC BLOCK DIAGRAMS

A Board IC303, TDA4665T-T

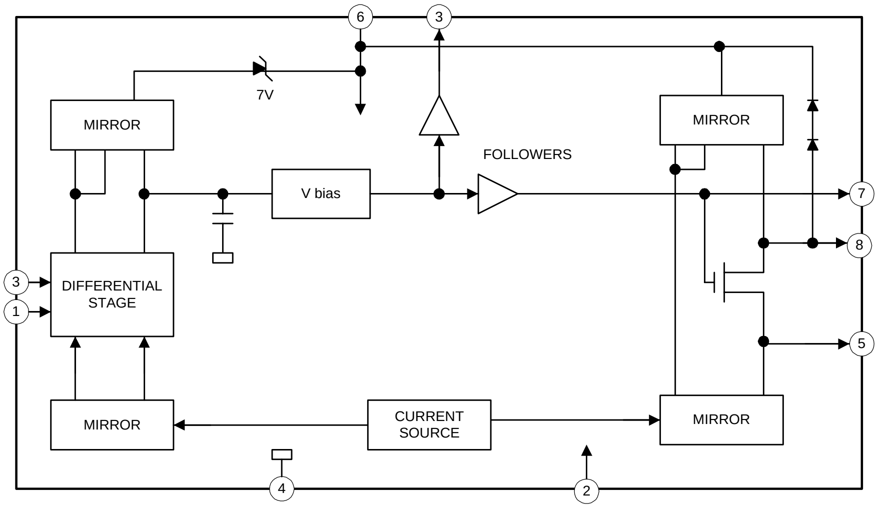


16
SIGNAL CLAMPING
LINE MEMORY
SAMPLE AND HOLD
LP
11
14
SIGNAL CLAMPING
LINE MEMORY
SAMPLE AND HOLD
LP
12
9
5
SANDCASTLE DETECTOR
FREQUENCY PHASE DETECTOR
DIVIDER BY 192
LP
6 MHz CCO
DIVIDER BY 2
10
1
3

D Board IC261 TDA2822M

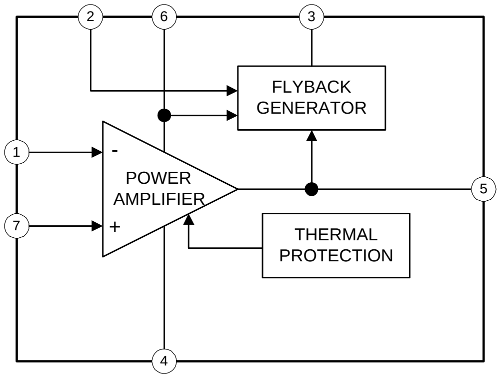


C Board IC703,704,705 TDA6111Q/N4



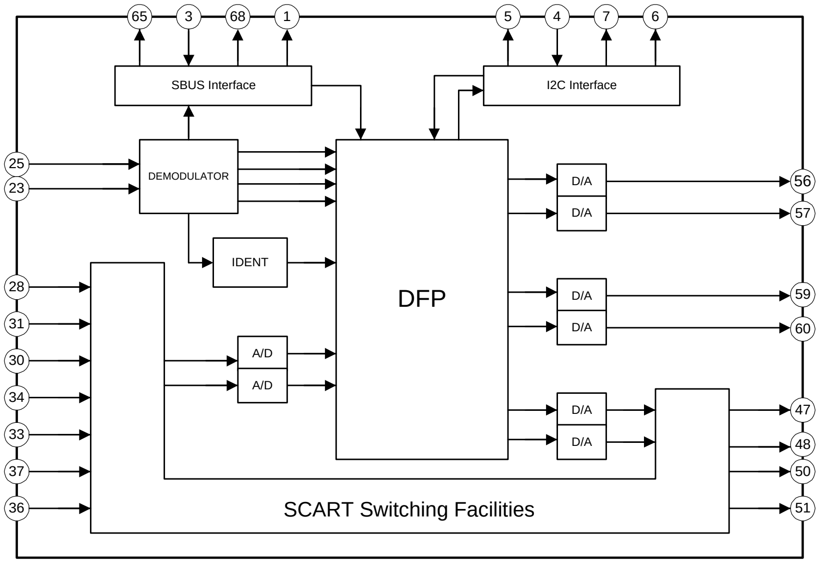
6
3
7V
MIRROR
MIRROR
FOLLOWERS
V bias
7
8
3
1
DIFFERENTIAL STAGE
5
MIRROR
CURRENT SOURCE
MIRROR
4
2

D Board IC802 STV9379



2
6
3
FLYBACK GENERATOR
1
-
POWER AMPLIFIER
+
5
7
THERMAL PROTECTION
4

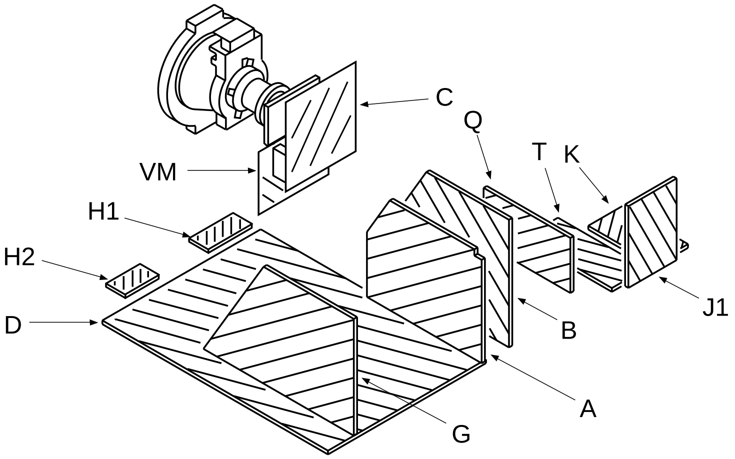
A Board IC201 MSP3400C-PS-C6-T/MSP3410B-PS-F7-T



65
3
68
1
5
4
7
6
SBUS Interface
I2C Interface
25
23
DEMODULATOR
D/A
D/A
56
57
IDENT
DFP
28
31
D/A
D/A
59
60
30
A/D
A/D
34
D/A
D/A
47
33
48
37
50
36
SCART Switching Facilities
51

5-2. CIRCUIT BOARDS LOCATION

Q BOARD : KV-32WS4A,4D,4E,4K.4R AND 4U ONLY



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  k = 1000 , M = 1000K
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm
Rating electrical power ¼ W

- ▭ : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊥ : earth - ground.
- ⫽ : earth - chassis.
- ♯ : no mounted.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

Note : Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTABLE RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

- Readings are taken with a colour-bar signal input.
- Readings are taken with 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- ▬ : B+ bus.
- ➡ : signal path. (RF)

SECTION 6

EXPLODED VIEWS

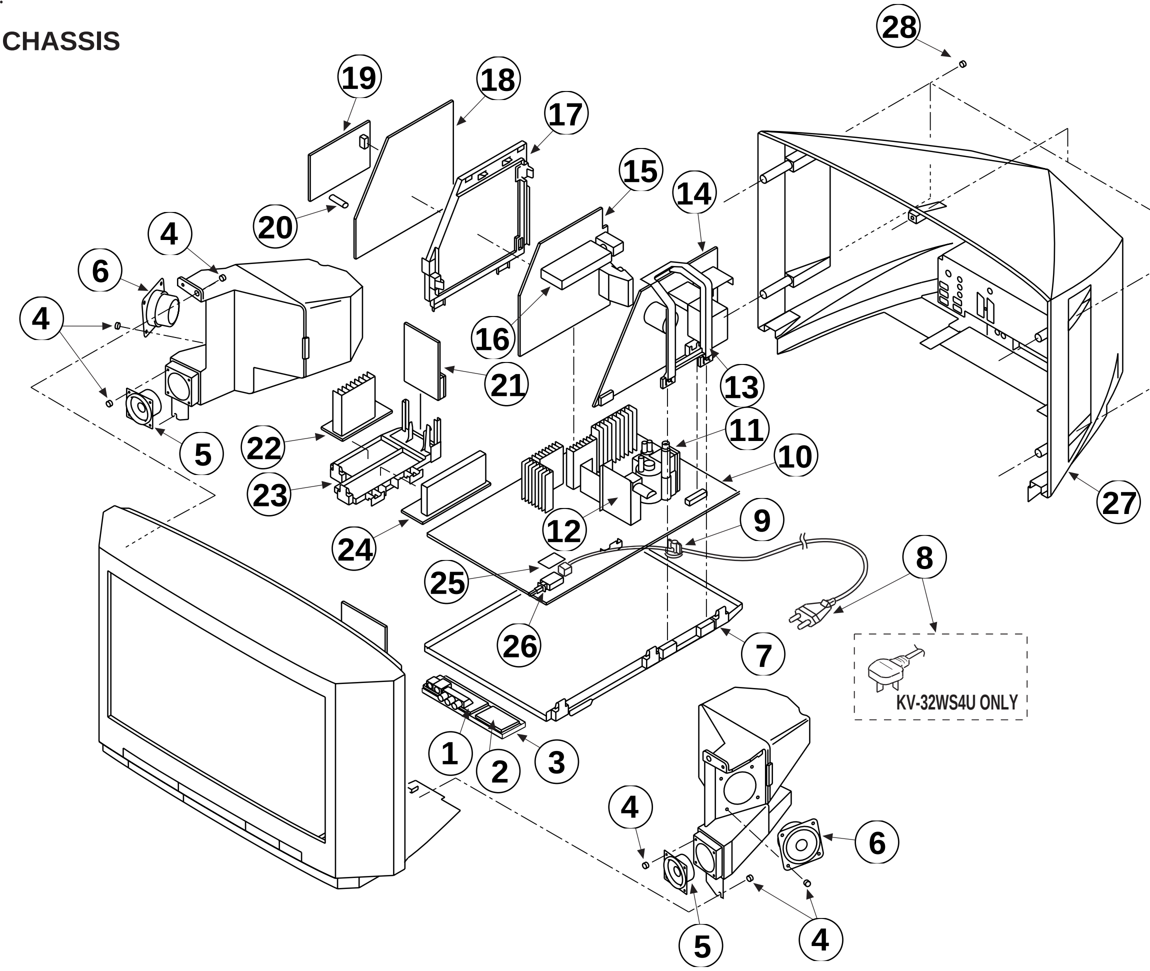
NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

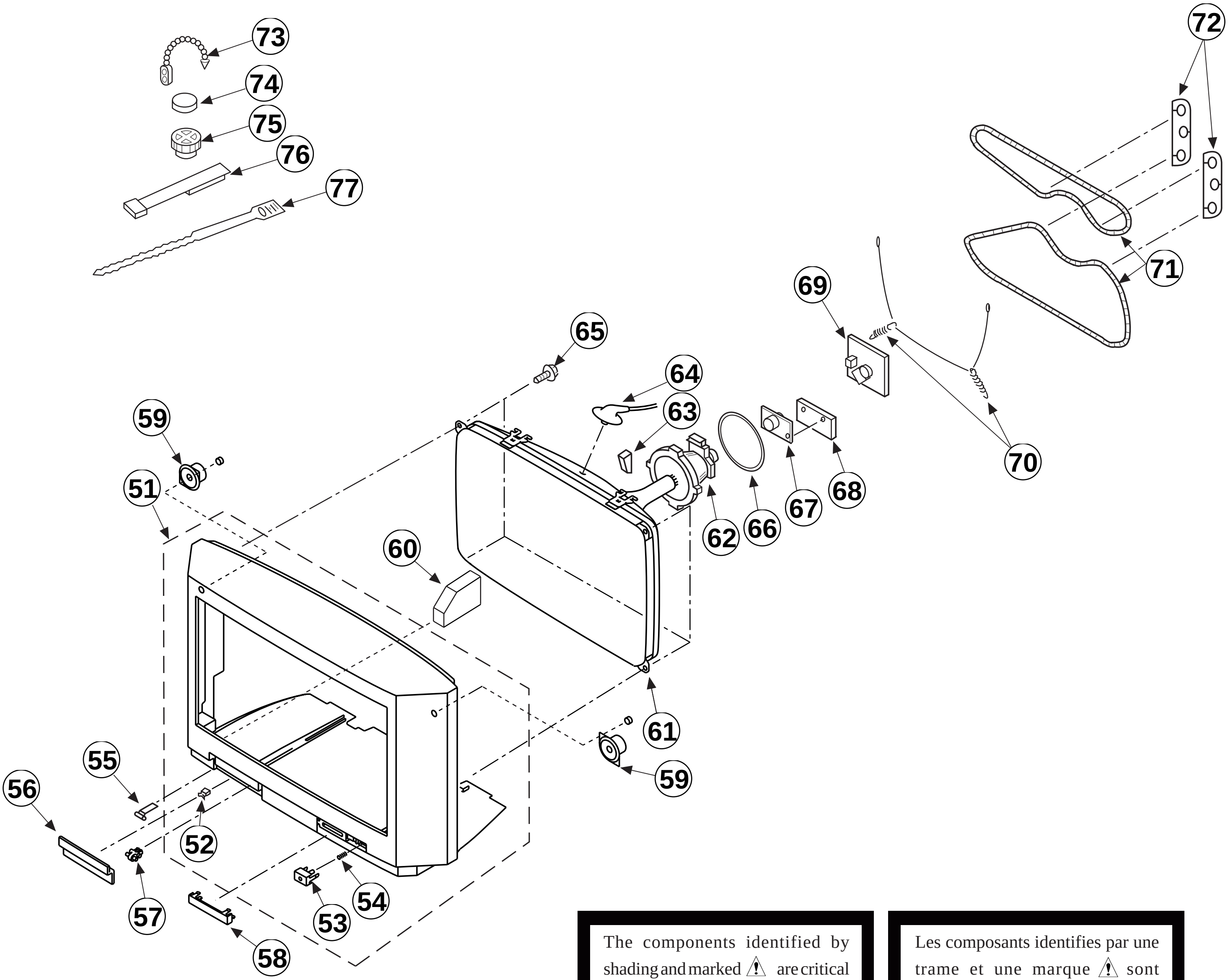
6-1. CHASSIS



REF NO	PART NO	DESCRIPTION	REMARK
1	*A-1646-122-A	H1 BOARD, COMPLETE	
2	*A-1646-123-A	H2 BOARD, COMPLETE	
3	*4-203-627-01	BRACKET, H	
4	4-039-355-11	SCREW(4X12), (+) BV TAPPING	
5	1-505-154-11	SPEAKER (6.5CM)	
6	1-505-155-11	SPEAKER (10CM)	
7	*4-203-457-01	BRACKET, MAIN	
8	⚠ 1-751-680-11	CORD, POWER (WITH NOISE FILTER) 2.5A/250V	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
	⚠ 1-776-204-11	CORD, POWER (FILTER) 3A/250V	(KV-32WS4U)
9	⚠ *4-202-531-01	AC CORD LOCK (SC)	
10	*A-1640-245-A	D BOARD, COMPLETE	
11	⚠ 1-453-223-11	TRANSFORMER ASSY, FLYBACK	(NX-4123/U2B4)
12	*4-203-609-01	HOLDER, G	
13	*4-203-613-01	SUPPORTER, G	
14	*A-1636-020-A	G BOARD, COMPLETE	
15	*A-1632-577-A	A BOARD, COMPLETE	(KV-32WS4A)
	*A-1632-575-A	A BOARD, COMPLETE	(KV-32WS4B)
	*A-1632-497-A	A BOARD, COMPLETE	(KV-32WS4D)
	*A-1632-578-A	A BOARD, COMPLETE	(KV-32WS4E)
	*A-1632-579-A	A BOARD, COMPLETE	(KV-32WS4K)
	*A-1632-580-A	A BOARD, COMPLETE	(KV-32WS4R)
	*A-1632-576-A	A BOARD, COMPLETE	(KV-32WS4U)

REF NO	PART NO	DESCRIPTION	REMARK
16	1-693-338-21	TUNER (TUVIF) (AEP)	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R)
	1-693-340-21	TUNER (TUVIF) (FR)	(KV-32WS4B)
	1-693-339-21	TUNER (TUVIF) (UK)	(KV-32WS4U)
17	*4-203-612-01	BRACKET, A-B	
18	*A-1620-079-A	B BOARD, COMPLETE	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
	*A-1620-086-A	B BOARD, COMPLETE	(KV-32WS4B)
19	*A-1626-008-A	Q BOARD, COMPLETE	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
20	*4-203-568-01	HOLDER, PCB	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
21	*A-1651-085-A	J1 BOARD, COMPLETE	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
	*A-1651-090-A	J1 BOARD, COMPLETE	(KV-32WS4B)
22	*A-1649-016-A	K BOARD, COMPLETE	
23	*4-203-537-01	BRACKET, J-K-T	
24	*A-1652-043-A	T BOARD, COMPLETE	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R)
	*A-1652-045-A	T BOARD, COMPLETE	(KV-32WS4B)
	*A-1652-046-A	T BOARD, COMPLETE	(KV-32WS4U)
25	4-386-611-01	COVER SWITCH	
26	⚠ 1-571-433-21	SWITCH, PUSH (AC POWER)	
27	4-203-582-01	COVER, REAR	
28	4-039-358-01	SCREW (4X16), (+) BV TAPPING	

6-2. PICTURE TUBE



The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF NO		PART NO	DESCRIPTION	REMARK
51		A-4200-284-1	BEZNET ASSY	52-54
52		4-392-036-01	CATCHER PUSH	
53		4-203-581-01	BUTTON, POWER	
54		4-202-964-01	SPRING	
55		4-045-250-01	DAMPER	
56		4-203-625-01	DOOR (PAINTED)	
57		4-202-555-01	SHAFT, DOOR	
58		4-203-539-01	WINDOW ORNAMENTAL	
59		1-504-418-21	SPEAKER (5CM)	
60		*4-203-098-01	SUPPORTER, CRT	
61	⚠	8-735-032-05	PICTURE TUBE (SD-297) (W76LHT010X)	
62	⚠	8-451-485-11	DEFLECTION YOKE (Y32C2C2-M)	
63		3-704-495-01	SPACER, DY	
64	⚠	1-251-317-31	CAP ASSY, HIGH-VOLTAGE	
65		4-203-216-01	PT-SCREW	
66		1-452-724-22	COIL, NA ROTATION (RT-165)	
67	⚠	8-453-011-11	NECK ASSY PICTURE TUBE (NA299-M)	
68		*A-1644-076-A	VM BOARD, COMPLETE	
69		*A-1638-096-A	C BOARD, COMPLETE	
70		4-369-318-51	SPRING, TENSION	
71	⚠	1-411-871-11	COIL DEGAUSSING	
72		4-202-749-01	HOLDER, D.G.C. (29"/32")	
73		4-308-870-00	CLIP, LEAD WIRE	
74		1-452-032-00	MAGNET, DISK; 10MM Ø	
75		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
76		X-4387-214-1	PERMALLOY ASSY, CORRECTION	
77		3-701-007-00	BAND, BINDING	

SECTION 7

ELECTRICAL PARTS LIST

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

When indicating parts by reference number, please include the board name.

CAPACITORS
MF : mF , PF : mmF

COILS
MMH : mH , µH : mH

B

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1620-079-A	B BOARD, COMPLETE (KV-32WS4A/32WS4D/ 32WS4E/32WS4K/ 32WS4R/32WS4U) ******************			
	*A-1620-086-A	B BOARD, COMPLETE (KV-32WS4B) ******************			
		< CAPACITOR >			
C407	1-126-969-11	ELECT	220MF	20%	50V
C408	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C409	1-162-638-11	CERAMIC CHIP	1MF		16V
C410	1-162-638-11	CERAMIC CHIP	1MF		16V
C411	1-162-638-11	CERAMIC CHIP	1MF		16V
C412	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C413	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C414	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C415	1-162-638-11	CERAMIC CHIP	1MF		16V
C416	1-162-638-11	CERAMIC CHIP	1MF		16V
C417	1-162-638-11	CERAMIC CHIP	1MF		16V
C418	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C419	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C420	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C421	1-162-568-11	CERAMIC CHIP	0.33MF	10%	16V
C422	1-162-638-11	CERAMIC CHIP	1MF		16V
C427	1-126-963-11	ELECT	4.7MF	20%	50V
C428	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C429	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C430	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C431	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C432	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C433	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C434	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C435	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V
C438	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C439	1-126-964-11	ELECT	10MF	20%	50V
C440	1-126-964-11	ELECT	10MF	20%	50V
C441	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C443	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C444	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C445	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C446	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C449	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C450	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C451	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C452	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C453	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C454	1-162-568-11	CERAMIC CHIP	0.33MF	10%	16V
C455	1-126-964-11	ELECT	10MF	20%	50V
C458	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C460	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C1800	1-126-963-11	ELECT	4.7MF	20%	50V
C1801	1-126-963-11	ELECT	4.7MF	20%	50V
C1802	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C1803	1-126-964-11	ELECT	10MF	20%	50V
C1804	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1805	1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V
C1806	1-110-501-11	CERAMIC CHIP	0.33MF	10%	16V
C1807	1-126-963-11	ELECT	4.7MF	20%	50V
C1808	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C1809	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C1810	1-162-638-11	CERAMIC CHIP	1MF		16V
C1811	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C1812	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C1813	1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V
C1814	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C1815	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C1816	1-126-963-11	ELECT	4.7MF	20%	50V
C1817	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1818	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1819	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C1823	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1824	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1825	1-126-964-11	ELECT	10MF	20%	50V
C1826	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1827	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1828	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C1829	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C1830	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1831	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C1832	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1833	1-126-964-11	ELECT	10MF	20%	50V
C1834	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1835	1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V
C1836	1-110-501-11	CERAMIC CHIP	0.33MF	10%	16V
C1839	1-126-963-11	ELECT	4.7MF	20%	50V
C1840	1-162-638-11	CERAMIC CHIP	1MF		16V
C1841	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C1842	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C1843	1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V
C1846	1-126-963-11	ELECT	4.7MF	20%	50V
C1847	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1848	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V

B

REF.NO.	PART NO.	DESCRIPTION		REMARK
C1849	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C1850	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C1852	1-164-005-11	CERAMIC CHIP 0.47MF		16V
C1853	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C1854	1-164-005-11	CERAMIC CHIP 0.47MF		16V
C1855	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V
C1856	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C1857	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C1858	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V
C1859	1-164-005-11	CERAMIC CHIP 0.47MF		16V
C1860	1-126-961-11	ELECT 2.2MF	20%	50V
C1861	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1862	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1864	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C1865	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1866	1-126-964-11	ELECT 10MF	20%	50V
C1867	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1868	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1869	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1870	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1871	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1872	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1873	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1874	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1875	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1876	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C1877	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C1878	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1879	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1880	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1881	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1882	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1883	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1884	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1885	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1886	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1887	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1889	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1890	1-126-964-11	ELECT 10MF	20%	50V
C1891	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1892	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1893	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1894	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1898	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1899	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1903	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1904	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	50V
C1910	1-126-964-11	ELECT 10MF	20%	50V
C1912	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1919	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1921	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C1922	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C1924	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1925	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1926	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1927	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1928	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1931	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1932	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1933	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V

REF.NO.	PART NO.	DESCRIPTION		REMARK
C1935	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1947	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1948	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
JR426	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
R1824	1-164-049-11	CERAMIC 13PF	5%	50V
R1839	1-126-963-11	ELECT 4.7MF	20%	50V

< CONNECTOR >

REF.NO.	PART NO.	DESCRIPTION
CN412	*1-564-513-11	PLUG, CONNECTOR 10P
CN413	*1-564-511-11	PLUG, CONNECTOR 8P
CN417	*1-564-596-11	PLUG, CONNECTOR 15P
CN419	*1-564-512-11	PLUG, CONNECTOR 9P
CN1810	*1-564-512-11	PLUG, CONNECTOR 9P
CN1813	1-778-822-11	CONNECTOR BOARD TO BOARD 40P (KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
CN1815	*1-564-512-11	PLUG, CONNECTOR 9P

< DIODE >

REF.NO.	PART NO.	DESCRIPTION
D401	8-719-914-43	DIODE DAN202K
D402	8-719-914-43	DIODE DAN202K
D403	8-719-028-00	DIODE MA3033-L
D410	8-719-401-63	DIODE MA3062M-TX
D411	8-719-914-43	DIODE DAN202K
D412	8-719-914-43	DIODE DAN202K
D414	8-719-914-42	DIODE DA204K
D415	8-719-914-43	DIODE DAN202K

< FERRITE BEAD >

REF.NO.	PART NO.	DESCRIPTION
FB401	1-414-234-11	INDUCTOR, FERRITE BEAD
FB402	1-414-234-11	INDUCTOR, FERRITE BEAD
FB403	1-414-234-11	INDUCTOR, FERRITE BEAD
FB404	1-414-234-11	INDUCTOR, FERRITE BEAD
FB405	1-414-234-11	INDUCTOR, FERRITE BEAD
FB406	1-414-234-11	INDUCTOR, FERRITE BEAD
FB407	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1801	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1802	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1803	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1804	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1805	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1806	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1807	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1808	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1809	1-414-234-11	INDUCTOR, FERRITE BEAD
FB1810	1-414-234-11	INDUCTOR, FERRITE BEAD

< ENCAPSULATED FILTER >

REF.NO.	PART NO.	DESCRIPTION
FL1801	1-233-767-11	FILTER
FL1803	1-415-940-11	DELAY LINE
FL1807	1-236-071-11	ENCAPSULATED COMPONENT
FL1808	1-236-071-11	ENCAPSULATED COMPONENT
FL1809	1-236-071-11	ENCAPSULATED COMPONENT

< IC >

REF.NO.	PART NO.	DESCRIPTION
IC402	8-759-275-36	IC TDA4780/V3
IC403	8-759-421-42	IC SDA9361
IC405	8-759-438-33	IC 74LVC08D
IC406	8-759-439-64	IC HEF4053BT
IC1801	8-759-257-59	IC TDA8755T-T

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1803	8-759-439-27	IC TMS4C2972-28DTR	
IC1804	8-759-439-64	IC HEF4053BT	
IC1805	8-759-439-64	IC HEF4053BT	
IC1806	8-759-439-64	IC HEF4053BT	
IC1807	8-759-439-64	IC HEF4053BT	
IC1808	8-759-439-62	IC SAA4990H/V2	
IC1809	8-759-438-63	IC SDA9280A41	
IC1810	8-759-438-66	IC CXD8626Q	
IC1811	8-759-257-59	IC TDA8755T-T	
IC1812	8-759-444-24	IC 74HCT4046AD/S470	
IC1813	8-759-444-24	IC 74HCT4046AD/S470	
IC1814	8-759-438-64	IC SAA4952WP/V1	
IC1815	8-759-444-24	IC 74HCT4046AD/S470	
IC1816	8-759-444-25	IC P83C654EBA/560	
IC1817	8-759-439-27	IC TMS4C2972-28DTR	
IC1819	8-759-991-41	IC LM78L05ACZ	
IC1821	8-759-439-64	IC HEF4053BT	
IC1822	8-759-439-64	IC HEF4053BT	
IC1823	8-759-991-41	IC LM78L05ACZ	
IC1824	8-759-991-41	IC LM78L05ACZ	
IC1825	8-759-234-77	IC TC4S66F	
IC1831	8-759-439-26	IC SN74LS221D	

< COIL >

REF.NO.	PART NO.	DESCRIPTION	REMARK
L401	1-408-429-00	INDUCTOR 470UH	
L402	1-408-429-00	INDUCTOR 470UH	
L407	1-410-999-11	INDUCTOR CHIP 3.3UH	
L1801	1-410-435-21	INDUCTOR 220UH	
L1802	1-410-435-21	INDUCTOR 220UH	
L1803	1-408-403-00	INDUCTOR 3.3UH	
L1804	1-408-409-00	INDUCTOR 10UH	
L1805	1-410-999-11	INDUCTOR CHIP 3.3UH	
L1810	1-410-427-11	INDUCTOR 47UH	
L1812	1-408-403-00	INDUCTOR 3.3UH	
L1814	1-408-403-00	INDUCTOR 3.3UH	

< TRANSISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q411	8-729-901-06	TRANSISTOR DTA144EK	
Q412	8-729-901-06	TRANSISTOR DTA144EK	
Q415	8-729-900-53	TRANSISTOR DTC114EK	
Q416	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1801	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1802	8-729-901-01	TRANSISTOR DTC144EK	
Q1804	8-729-901-01	TRANSISTOR DTC144EK	
Q1805	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1807	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1808	8-729-901-01	TRANSISTOR DTC144EK	
Q1809	8-729-901-01	TRANSISTOR DTC144EK	
Q1810	8-729-901-01	TRANSISTOR DTC144EK	
Q1812	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1813	8-729-900-53	TRANSISTOR DTC114EK	

< RESISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
C1916	1-216-043-91	METAL GLAZE 560 5% 1/10W	
L1806	1-216-295-91	METAL GLAZE 0 5% 1/10W	
L1807	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR409	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR417	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR418	1-216-295-91	METAL GLAZE 0 5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
JR420	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR421	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR422	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR423	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR424	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1801	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1802	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1803	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1804	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1805	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1806	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1807	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1808	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1809	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1810	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1811	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1812	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1840	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1841	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1843	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4B)
JR1859	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1860	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1861	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1862	1-216-041-00	METAL GLAZE 470 5% 1/10W	
JR1863	1-216-041-00	METAL GLAZE 470 5% 1/10W	
JR1864	1-216-041-00	METAL GLAZE 470 5% 1/10W	
JR1875	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1890	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1893	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/ 32WS4U)
JR1894	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1896	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1897	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1898	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1899	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1901	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1904	1-216-029-00	METAL GLAZE 150 5% 1/10W	
JR1905	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1910	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR1911	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R408	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R409	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R439	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R443	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R444	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R445	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R446	1-216-025-91	METAL GLAZE 100 5% 1/10W	

B

REF.NO.	PART NO.	DESCRIPTION	REMARK
R447	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R448	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R449	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R450	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R451	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R452	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R453	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R454	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R455	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W	
R456	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R457	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R458	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R459	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R463	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R465	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R466	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R467	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R468	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R469	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R470	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R473	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R477	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R483	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W	
R484	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R492	1-216-027-00	METAL GLAZE 120 5% 1/10W	
R1801	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R1802	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1803	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R1804	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R1805	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1806	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R1807	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1808	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1810	1-216-076-00	METAL GLAZE 13K 5% 1/10W	
R1811	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1812	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R1813	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R1814	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R1815	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R1816	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1817	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R1818	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R1819	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1820	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R1821	1-216-023-00	METAL GLAZE 82 5% 1/10W	
R1822	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R1823	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R1826	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R1827	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1828	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R1829	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1830	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1831	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1832	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1833	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1834	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R1835	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R1836	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1837	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1838	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R1840	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1841	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1842	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R1843	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R1844	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1845	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1846	1-216-056-00	METAL GLAZE 2K 5% 1/10W	
R1847	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R1848	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1849	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R1850	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1851	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1852	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1853	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1854	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1855	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1856	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1857	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1858	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1859	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R1860	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R1861	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1864	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R1865	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1866	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1867	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R1868	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1869	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1870	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1871	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R1872	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R1873	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1874	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R1875	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1876	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R1877	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1878	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1879	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1880	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R1881	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1882	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R1885	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1886	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1888	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R1890	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1891	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1892	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1893	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1894	1-216-047-91	METAL GLAZE 820 5% 1/10W	
R1895	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1896	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1897	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1898	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1899	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1900	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1901	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1902	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1903	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1904	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1905	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R1906	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1907	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1908	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1909	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1910	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1911	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1912	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1914	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1915	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W	
R1920	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R1921	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1922	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1930	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1931	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1932	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1933	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	

< CRYSTAL >

REF.NO.	PART NO.	DESCRIPTION	REMARK
X401	1-767-343-21	VIBRATOR, CRYSTAL (24.576MHz)	
X1801	1-579-175-11	VIBRATOR, CERAMIC (10MHz)	

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*A-1626-008-A Q BOARD, COMPLETE (KV-32WS4A/32WS4D/
***************** 32WS4E/32WS4K/
32WS4R/32WS4U)

< CAPACITOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
C1	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C2	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C4	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C6	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C7	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C8	1-104-664-11	ELECT 47MF 20%	16V
C9	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C10	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C11	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C12	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C13	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C14	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C15	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C16	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C20	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C21	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C22	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C23	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C24	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C25	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C26	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C27	1-126-965-11	ELECT 22MF 20%	50V
C28	1-126-941-11	ELECT 470MF 20%	16V
C29	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C33	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C34	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C36	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V
C37	1-124-120-11	ELECT 220MF 20%	16V
C38	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C39	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C40	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C41	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C42	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C43	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C44	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C45	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C46	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C47	1-165-319-11	CERAMIC CHIP 0.1MF	50V

< CONNECTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN1	1-778-823-11	CONNECTOR, BOARD TO BOARD 40P	
CN3	*1-564-520-11	PLUG, CONNECTOR 5P	

< IC >

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-432-35	IC MC74F240DWR2	
IC2	8-759-432-94	IC CXD8625Q	
IC3	8-759-432-95	IC CXD8624Q	
IC4	8-759-439-27	IC TMS4C2972-28DTR	
IC5	8-759-432-96	IC MC74F157ADR2	
IC6	8-759-439-27	IC TMS4C2972-28DTR	
IC7	8-759-376-88	IC SAA7185WP	
IC8	8-759-908-15	IC TL431CLP	
IC9	8-759-432-96	IC MC74F157ADR2	
IC10	8-759-432-96	IC MC74F157ADR2	
IC11	8-759-432-96	IC MC74F157ADR2	
IC12	8-759-432-96	IC MC74F157ADR2	

< COIL >

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	1-408-409-00	INDUCTOR 10UH	
L3	1-408-409-00	INDUCTOR 10UH	

< TRANSISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-032-65	TRANSISTOR 2SD2396H	

< RESISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
C18	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R2	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R5	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R6	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R7	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R8	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R9	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R10	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R11	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R12	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R14	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R15	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R17	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R18	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R19	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R20	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R21	1-216-003-11	METAL GLAZE 12 5% 1/10W	
R22	1-216-008-11	METAL GLAZE 20 5% 1/10W	
R23	1-216-008-11	METAL GLAZE 20 5% 1/10W	
R24	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R25	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R29	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R32	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R33	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R34	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R35	1-216-295-91	METAL GLAZE 0 5% 1/10W	

Q A

REF.NO.	PART NO.	DESCRIPTION	REMARK
R36	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R37	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R38	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R39	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R40	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R41	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R42	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R43	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R44	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R45	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R46	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R47	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R48	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R52	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R53	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R54	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R55	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R56	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R57	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R58	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R59	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R60	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R61	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R62	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R63	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R64	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R65	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R66	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R68	1-216-027-00	METAL GLAZE 120 5% 1/10W	
R69	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R70	1-216-030-00	METAL GLAZE 160 5% 1/10W	
R71	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R87	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R89	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R90	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R91	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R92	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R93	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R94	1-216-295-91	METAL GLAZE 0 5% 1/10W	

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*A-1632-577-A A BOARD, COMPLETE (KV-32WS4A)
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*A-1632-575-A A BOARD, COMPLETE (KV-32WS4B)
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*A-1632-497-A A BOARD, COMPLETE (KV-32WS4D)
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*A-1632-578-A A BOARD, COMPLETE (KV-32WS4E)
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*A-1632-579-A A BOARD, COMPLETE (KV-32WS4K)
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*A-1632-580-A A BOARD, COMPLETE (KV-32WS4R)
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*A-1632-576-A A BOARD, COMPLETE (KV-32WS4U)
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< CAPACITOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
C101	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C102	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C103	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	(KV-32WS4B)
C105	1-126-965-11	ELECT 22MF 20% 50V	
C111	1-124-907-11	ELECT 10MF 20% 50V	
C112	1-164-346-11	CERAMIC CHIP 1MF 16V	
C114	1-164-346-11	CERAMIC CHIP 1MF 16V	
C116	1-104-664-11	ELECT 47MF 20% 16V	
C117	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C118	1-104-664-11	ELECT 47MF 20% 16V	
C119	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C120	1-124-907-11	ELECT 10MF 20% 50V	
C121	1-164-299-11	CERAMIC CHIP 0.22MF 10% 25V	
C122	1-164-346-11	CERAMIC CHIP 1MF 16V	
C126	1-104-664-11	ELECT 47MF 20% 16V	
C127	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C128	1-104-664-11	ELECT 47MF 20% 16V	
C129	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C130	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C131	1-164-346-11	CERAMIC CHIP 1MF 16V	
C132	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C133	1-164-346-11	CERAMIC CHIP 1MF 16V	
C134	1-124-907-11	ELECT 10MF 20% 50V	
C135	1-164-299-11	CERAMIC CHIP 0.22MF 10% 25V	
C136	1-124-907-11	ELECT 10MF 20% 50V	
C137	1-164-506-11	CERAMIC CHIP 4.7MF 16V	
C138	1-126-964-11	ELECT 10MF 20% 50V	
C139	1-164-346-11	CERAMIC CHIP 1MF 16V	
C140	1-164-506-11	CERAMIC CHIP 4.7MF 16V	
C141	1-164-506-11	CERAMIC CHIP 4.7MF 16V	
C143	1-163-249-11	CERAMIC CHIP 82PF 5% 50V	(KV-32WS4B)
C144	1-163-235-11	CERAMIC CHIP 22PF 5% 50V	(KV-32WS4B)
C145	1-163-245-11	CERAMIC CHIP 56PF 5% 50V	(KV-32WS4B)
C146	1-164-346-11	CERAMIC CHIP 1MF 16V	
C150	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C151	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C152	1-124-907-11	ELECT 10MF 20% 50V	
C153	1-110-501-11	CERAMIC CHIP 0.33MF 10% 16V	
C154	1-110-501-11	CERAMIC CHIP 0.33MF 10% 16V	
C155	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C156	1-164-506-11	CERAMIC CHIP 4.7MF 16V	
C157	1-164-506-11	CERAMIC CHIP 4.7MF 16V	
C159	1-164-505-11	CERAMIC CHIP 2.2MF 16V	
C160	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	
C162	1-164-346-11	CERAMIC CHIP 1MF 16V	
C163	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C164	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C165	1-164-346-11	CERAMIC CHIP 1MF 16V	
C166	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	
C167	1-164-222-11	CERAMIC CHIP 0.22MF 25V	
C200	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	
C201	1-163-243-11	CERAMIC CHIP 47PF 5% 50V	
C202	1-164-506-11	CERAMIC CHIP 4.7MF 16V	
C203	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C204	1-162-568-11	CERAMIC CHIP 0.33MF 10% 16V	
C205	1-164-506-11	CERAMIC CHIP 4.7MF 16V	
C206	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C207	1-110-501-11	CERAMIC CHIP 0.33MF 10% 16V	
C208	1-110-501-11	CERAMIC CHIP 0.33MF 10% 16V	
C209	1-110-501-11	CERAMIC CHIP 0.33MF 10% 16V	
C210	1-110-501-11	CERAMIC CHIP 0.33MF 10% 16V	

REF.NO.	PART NO.	DESCRIPTION		REMARK
C211	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C212	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C213	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C214	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C215	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C216	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C217	1-124-907-11	ELECT 10MF	20%	50V
C218	1-124-907-11	ELECT 10MF	20%	50V
C219	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C220	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C221	1-163-275-11	CERAMIC CHIP 0.001MF	5%	50V
C222	1-163-275-11	CERAMIC CHIP 0.001MF	5%	50V
C223	1-163-275-11	CERAMIC CHIP 0.001MF	5%	50V
C224	1-163-275-11	CERAMIC CHIP 0.001MF	5%	50V
C227	1-164-337-11	CERAMIC CHIP 2.2MF		16V
C228	1-164-337-11	CERAMIC CHIP 2.2MF		16V
C229	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C230	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C231	1-163-087-00	CERAMIC CHIP 4PF	0.25PF	50V
C232	1-163-087-00	CERAMIC CHIP 4PF	0.25PF	50V
C233	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C234	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C303	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C304	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C305	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C306	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C307	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C308	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C309	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C310	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C311	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C312	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C313	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C314	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C315	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C316	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C317	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C318	1-164-182-11	CERAMIC CHIP 0.0033MF	10%	50V
C319	1-164-182-11	CERAMIC CHIP 0.0033MF	10%	50V
C320	1-165-320-11	CERAMIC CHIP 0.47MF	10%	16V
C321	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C322	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C323	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C324	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C325	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C332	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C333	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C334	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C335	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C336	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C337	1-162-568-11	CERAMIC CHIP 0.33MF	10%	16V
C338	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C339	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C340	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C341	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C342	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C343	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C344	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C345	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C346	1-164-505-11	CERAMIC CHIP 2.2MF		16V

REF.NO.	PART NO.	DESCRIPTION		REMARK
C347	1-164-505-11	CERAMIC CHIP 2.2MF		16V
C350	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C351	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C355	1-163-231-11	CERAMIC CHIP 15PF	5%	50V
C356	1-163-231-11	CERAMIC CHIP 15PF	5%	50V
C357	1-163-241-11	CERAMIC CHIP 39PF (KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)	5%	50V
C1001	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1002	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1003	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1004	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1005	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1006	1-165-321-11	CERAMIC CHIP 0.68MF	10%	16V
C1007	1-164-157-11	CERAMIC CHIP 0.068MF	10%	25V
C1020	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1021	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1022	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1035	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1036	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1039	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1040	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C1041	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C1042	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C1043	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1060	1-163-001-11	CERAMIC CHIP 220PF	10%	50V
C1101	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1102	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1103	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1104	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1105	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1106	1-164-346-11	CERAMIC CHIP 1MF		16V
C1108	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1109	1-163-037-11	CERAMIC CHIP 0.022MF	10%	50V
C1110	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1111	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1112	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C1113	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C1115	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C1116	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1201	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1202	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1203	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1204	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1205	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1206	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1207	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1208	1-163-263-11	CERAMIC CHIP 330PF	5%	50V
C1209	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1210	1-165-320-11	CERAMIC CHIP 0.47MF	10%	16V
C1213	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1214	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1215	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1216	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1217	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1218	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1219	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1220	1-164-337-11	CERAMIC CHIP 2.2MF		16V
C1221	1-162-638-11	CERAMIC CHIP 1MF		16V
C1222	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V

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REF.NO.	PART NO.	DESCRIPTION			REMARK
C1223	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C1224	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C1225	1-126-934-11	ELECT	220MF	20%	16V
C1227	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C1228	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C1229	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1230	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C1231	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C1235	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C1301	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1302	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1303	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C1304	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1305	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C1306	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C1310	1-124-443-00	ELECT	100MF	20%	10V
C1311	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C1312	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C1313	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C1314	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C1315	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1316	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1318	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1320	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1321	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1322	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1323	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1324	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1325	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1326	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1327	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1328	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1329	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1330	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1331	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1332	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1333	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1334	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1335	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1350	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C1360	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C1361	1-104-663-11	ELECT	33MF	20%	16V
C1401	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1402	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C1403	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C1404	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C1405	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1406	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1407	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1408	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C1409	1-165-320-11	CERAMIC CHIP	0.47MF	10%	16V
C1413	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1414	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1415	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1416	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1417	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1418	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1419	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C1420	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C1421	1-164-506-11	CERAMIC CHIP	4.7MF		16V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C1422	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C2001	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C2002	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C2004	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C2005	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C2007	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2020	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C2021	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C2023	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2024	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C2025	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C2026	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C2028	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2029	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C2030	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C2031	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C2033	1-163-251-11	CERAMIC CHIP	100PF	5%	50V

< FILTER >

CD1001	1-527-992-31	OSCILLATOR, CERAMIC
CF200	1-409-327-00	TRAP, CERAMIC (6.5MHZ) (KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/ 32WS4R)

< CONNECTOR >

CN101	1-695-301-21	CONNECTOR, BOARD TO BOARD 15P
CN115	*1-564-524-11	PLUG, CONNECTOR 9P
CN117	*1-564-520-11	PLUG, CONNECTOR 5P
CN201	1-766-296-11	CONNECTOR, DUAL SCART
CN1411	1-564-523-11	PLUG, CONNECTOR 8P
CN2012	*1-564-525-11	PLUG, CONNECTOR 10P

< BOOSTER >

CP101	1-251-372-11	BOOSTER, RF

< DIODE >

D102	8-719-158-49	DIODE RD12SB2
D103	8-719-158-49	DIODE RD12SB2
D104	8-719-158-49	DIODE RD12SB2
D105	8-719-158-49	DIODE RD12SB2
D199	8-719-914-43	DIODE DAN202K
D200	8-719-158-49	DIODE RD12SB2
D201	8-719-158-49	DIODE RD12SB2
D202	8-719-158-49	DIODE RD12SB2
D203	8-719-158-49	DIODE RD12SB2
D204	8-719-158-49	DIODE RD12SB2
D205	8-719-158-49	DIODE RD12SB2
D206	8-719-158-49	DIODE RD12SB2
D207	8-719-158-49	DIODE RD12SB2
D208	8-719-158-49	DIODE RD12SB2
D209	8-719-158-49	DIODE RD12SB2
D210	8-719-158-49	DIODE RD12SB2
D211	8-719-158-49	DIODE RD12SB2
D212	8-719-158-49	DIODE RD12SB2
D213	8-719-158-49	DIODE RD12SB2
D214	8-719-158-49	DIODE RD12SB2
D215	8-719-158-49	DIODE RD12SB2
D217	8-719-158-49	DIODE RD12SB2
D218	8-719-158-49	DIODE RD12SB2

REF.NO.	PART NO.	DESCRIPTION	REMARK
D219	8-719-158-49	DIODE RD12SB2	
D220	8-719-158-49	DIODE RD12SB2	
D221	8-719-158-49	DIODE RD12SB2	
D223	8-719-158-49	DIODE RD12SB2	
D301	8-719-401-41	DIODE MA3051L-TX	
D1007	8-719-914-44	DIODE DAP202K	
D1008	8-719-914-43	DIODE DAN202K	
D1009	8-719-105-91	DIODE RD5.6M-B2	
D1010	8-719-105-91	DIODE RD5.6M-B2	
D1401	8-719-401-41	DIODE MA3051L-TX	
D2001	8-719-036-58	DIODE MA3030-H(TX)	

< FERRITE BEAD >

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB101	1-414-235-11	INDUCTOR, FERRITE BEAD	
FB102	1-414-235-11	INDUCTOR, FERRITE BEAD	

< ENCAPSULATED FILTER >

REF.NO.	PART NO.	DESCRIPTION	REMARK
FL102	1-236-071-11	ENCAPSULATED COMPONENT	
FL103	1-236-071-11	ENCAPSULATED COMPONENT	
FL200	1-236-071-11	ENCAPSULATED COMPONENT	
FL201	1-233-764-21	FILTER	
FL202	1-236-071-11	ENCAPSULATED COMPONENT	
FL203	1-236-071-11	ENCAPSULATED COMPONENT	
FL302	1-236-071-11	ENCAPSULATED COMPONENT	
FL1001	1-236-071-11	ENCAPSULATED COMPONENT	
FL1002	1-236-071-11	ENCAPSULATED COMPONENT	
FL1101	1-236-071-11	ENCAPSULATED COMPONENT	
FL1102	1-236-071-11	ENCAPSULATED COMPONENT	
FL1201	1-236-071-11	ENCAPSULATED COMPONENT	
FL1202	1-236-071-11	ENCAPSULATED COMPONENT	
FL1203	1-236-071-11	ENCAPSULATED COMPONENT	
FL1204	1-236-071-11	ENCAPSULATED COMPONENT	
FL1301	1-236-071-11	ENCAPSULATED COMPONENT	
FL1302	1-236-071-11	ENCAPSULATED COMPONENT	
FL1303	1-236-071-11	ENCAPSULATED COMPONENT	
FL1304	1-233-766-21	FILTER	
FL1305	1-233-768-21	FILTER (SMD)	
FL1310	1-233-765-21	FILTER	
FL1402	1-236-071-11	ENCAPSULATED COMPONENT	
FL2001	1-236-071-11	ENCAPSULATED COMPONENT	
FL2003	1-236-071-11	ENCAPSULATED COMPONENT	

< IC >

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC101	8-752-069-53	IC CXA1855Q-T6	
IC102	8-759-267-25	IC LM2940T-9.0	
IC104	8-759-514-57	IC BA7046F	
IC201	8-759-376-56	IC MSP3400C-PS-C6-T (KV-32WS4A/32WS4D/32WS4K/32WS4R)	
	8-759-376-80	IC MSP3410B-PS-F7-T-ND (KV-32WS4B/32WS4E/32WS4U)	
IC302	8-759-439-59	IC TDA9144/N2 (KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/ 32WS4U)	
	8-759-439-58	IC TDA9143/N2 (KV-32WS4B)	
IC303	8-759-288-85	IC TDA4665T-T	
IC304	8-759-439-60	IC TDA9170T	
IC1001	8-759-442-44	IC SDA30C164-2-GEG	
IC1002	8-759-439-66	IC M27C4001-15C1-AE401	
	1-750-797-11	SOCKET, PLCC ; IC1002	
IC1003	8-759-378-21	IC ST24C16FB6	
IC1004	8-759-259-18	IC MB3793-42PNF	
IC1101	8-752-378-77	IC CXD2053S	
IC1201	8-759-439-65	IC TC9337F-015	
IC1202	8-759-264-22	IC TC9293F-EL	
IC1301	8-752-379-35	IC CXD2044Q-TL	
IC1302	8-759-711-62	IC NJM2240M	
IC1303	8-759-385-76	IC MC14052BDR2	
IC1401	8-759-439-58	IC TDA9143/N2	
IC1402	8-759-288-85	IC TDA4665T-T	
IC2001	8-759-438-62	IC SDA5275	
IC2004	8-759-426-56	IC MB814400C-70PJN-ER	

< COIL >

REF.NO.	PART NO.	DESCRIPTION	REMARK
L101	1-412-751-11	INDUCTOR 18UH (KV-32WS4B)	
L321	1-412-006-31	INDUCTOR CHIP 10UH (KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/ 32WS4R)	

< TRANSISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q102	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q103	8-729-039-67	TRANSISTOR BSS83 (KV-32WS4B)	
Q104	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-32WS4B)	
Q105	8-729-901-01	TRANSISTOR DTC144EK	
Q106	8-729-216-22	TRANSISTOR 2SA1162-G (KV-32WS4B)	
Q107	8-729-216-22	TRANSISTOR 2SA1162-G	
Q108	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q109	8-729-216-22	TRANSISTOR 2SA1162-G	
Q110	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q112	8-729-216-22	TRANSISTOR 2SA1162-G	
Q120	8-729-920-65	TRANSISTOR DTC123EK	
Q200	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q205	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/ 32WS4R)	
Q301	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q302	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q315	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q316	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q317	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q318	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1001	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1101	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1201	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q1202	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q1301	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1302	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1303	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1304	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1305	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1306	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1307	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1308	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1309	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1310	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1311	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1312	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1313	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1314	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1401	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q1402	8-729-038-96	TRANSISTOR IMZ1A-T109	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1403	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q1404	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1411	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1412	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q2005	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q2006	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q2007	8-729-027-59	TRANSISTOR DTC144EKA-T146	

< RESISTOR >

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1212	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1001	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1002	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1003	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1004	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1006	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1008	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1009	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1010	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1011	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1339	1-216-295-91	METAL GLAZE	0	5%	1/10W	
JR1340	1-216-295-91	METAL GLAZE	0	5%	1/10W	
R101	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R102	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R103	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R104	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R106	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R107	1-216-295-91	METAL GLAZE	0	5%	1/10W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R108	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R109	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R110	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R111	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R112	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R113	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R114	1-216-311-00	METAL GLAZE	6.8	5%	1/10W	
R115	1-216-311-00	METAL GLAZE	6.8	5%	1/10W	
R116	1-216-311-00	METAL GLAZE	6.8	5%	1/10W	
R117	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R118	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R119	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R120	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R121	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R122	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R123	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R124	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R126	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R127	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R128	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R129	1-208-774-11	METAL CHIP	470	0.50%	1/10W	(KV-32WS4B)
R130	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R131	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R132	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R133	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R134	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R135	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R136	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R137	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R138	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R139	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R141	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R142	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R143	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R144	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R146	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R148	1-208-774-11	METAL CHIP	470	0.50%	1/10W	(KV-32WS4B)
R149	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(KV-32WS4B)
R151	1-208-774-11	METAL CHIP	470	0.50%	1/10W	(KV-32WS4B)
R152	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R153	1-216-311-00	METAL GLAZE	6.8	5%	1/10W	
R154	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R155	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R156	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	(KV-32WS4B)
R157	1-216-025-91	METAL GLAZE	100	5%	1/10W	(KV-32WS4B)
R159	1-216-304-11	METAL GLAZE	3.3	5%	1/10W	
R160	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R162	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R163	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R166	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R167	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R168	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R169	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R170	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R171	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R172	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R173	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R174	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R175	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R176	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R177	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R178	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R179	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R180	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R181	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R182	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R183	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R184	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R185	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R186	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R187	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R188	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R189	1-218-755-11	METAL CHIP	130K	0.50%	1/10W	
R190	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R191	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R192	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R193	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R194	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R195	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R196	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R197	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R198	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R199	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R200	1-216-049-91	METAL GLAZE	1K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R201	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R202	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R203	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R204	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R205	1-216-037-00	METAL GLAZE 330 5% 1/10W (KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)	
R207	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R208	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R209	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R210	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R211	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R212	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R213	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R214	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R215	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R272	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)	
R311	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R312	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R313	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R314	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R315	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R317	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R330	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R331	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R332	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R333	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R334	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R335	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R336	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R337	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R338	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R340	1-126-963-11	ELECT 4.7 20% 50V	
R341	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R342	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R343	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R345	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R351	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R352	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R353	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R374	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R375	1-216-308-00	METAL GLAZE 4.7 5% 1/10W	
R1001	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1011	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1012	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1030	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1033	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1034	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1036	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1037	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1038	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1039	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1040	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1041	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1042	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1043	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1044	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1045	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1046	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1047	1-216-009-00	METAL GLAZE 22 5% 1/10W	
R1048	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R1050	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1051	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1052	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R1053	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1054	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1056	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1057	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1058	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1059	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1060	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1061	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1062	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1063	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1070	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1071	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1075	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1101	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1102	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1103	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1104	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1105	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1106	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R1107	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1108	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R1109	1-216-005-00	METAL GLAZE 15 5% 1/10W	
R1110	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1111	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R1112	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1113	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1115	1-216-009-00	METAL GLAZE 22 5% 1/10W	
R1201	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R1202	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R1203	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1204	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1206	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1208	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1209	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1210	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R1211	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R1212	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R1213	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R1214	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R1215	1-216-190-00	METAL GLAZE 470 5% 1/8W	
R1220	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1221	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1222	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1223	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1224	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1225	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1301	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1302	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1303	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R1304	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R1305	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1306	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1307	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1308	1-216-017-91	METAL GLAZE 47 5% 1/10W	

A **G**

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1309	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R1310	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R1311	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R1319	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R1320	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1321	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R1325	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R1330	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1331	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R1332	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1333	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1334	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1335	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1336	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W	
R1337	1-216-666-11	METAL CHIP	4.3K	0.50%	1/10W	
R1338	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1339	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1340	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1341	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R1342	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R1344	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1346	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1347	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R1348	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1349	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1350	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R1351	1-216-047-91	METAL GLAZE	820	5%	1/10W	
R1352	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R1353	1-216-047-91	METAL GLAZE	820	5%	1/10W	
R1354	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R1401	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R1402	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R1403	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R1404	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R1405	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1406	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1407	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1410	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1411	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1412	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1413	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1414	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1415	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1416	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1417	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1418	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1426	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R1427	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R1428	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R1461	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R1462	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R1463	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R2001	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R2002	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R2020	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R2021	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2022	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R2023	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R2024	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R2025	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R2026	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R2027	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R2028	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R2031	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R2032	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R2033	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R2034	1-216-295-91	METAL GLAZE	0	5%	1/10W	
R2035	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R2037	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R2040	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R2041	1-216-025-91	METAL GLAZE	100	5%	1/10W	

< TUNER >

REF.NO.	PART NO.	DESCRIPTION
TU101	1-693-338-21	TUNER (TUVIF) (AEP) (KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R)
	1-693-340-21	TUNER (TUVIF) (FR) (KV-32WS4B)
	1-693-339-21	TUNER (TUVIF) (UK) (KV-32WS4U)

< CRYSTAL >

REF.NO.	PART NO.	DESCRIPTION
X200	1-760-628-11	VIBRATOR, CRYSTAL (18.432MHz)
X301	1-567-505-11	OSCILLATOR, CRYSTAL (3.58MHz)
X302	1-567-504-11	OSCILLATOR, CRYSTAL (4.43MHz)
X1001	1-760-551-21	VIBRATOR, CERAMIC (20.48MHz)
X1101	1-767-342-21	VIBRATOR, CRYSTAL (14.32MHz)
X1202	1-767-344-21	VIBRATOR, CRYSTAL (12.288MHz)
X1401	1-567-505-11	OSCILLATOR, CRYSTAL (3.58MHz)
X1402	1-567-504-11	OSCILLATOR, CRYSTAL (4.43MHz)

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*A-1636-020-A G BOARD, COMPLETE
****

< CAPACITOR >

REF.NO.		PART NO.	DESCRIPTION				REMARK
C602		1-165-127-11	CERAMIC	470PF	10%	500V	
C603		1-165-127-11	CERAMIC	470PF	10%	500V	
C604		1-136-171-00	FILM	0.33MF	5%	50V	
C605		1-137-399-11	FILM	0.1MF	5%	50V	
C606		1-136-171-00	FILM	0.33MF	5%	50V	
C607		1-137-399-11	FILM	0.1MF	5%	50V	
C608		1-164-625-11	CERAMIC	680PF	10%	500V	
C609		1-129-718-00	FILM	0.022MF	5%	630V	
C610		1-126-953-11	ELECT	2200MF	20%	35V	
C611		1-126-953-11	ELECT	2200MF	20%	35V	
C612		1-124-903-11	ELECT	1MF	20%	50V	
C613		1-128-548-11	ELECT	4700MF	20%	25V	
C614		1-128-548-11	ELECT	4700MF	20%	25V	
C615		1-110-626-11	ELECT	330MF	20%	160V	
C616		1-164-625-11	CERAMIC	680PF	10%	500V	
C617		1-136-559-11	MYLAR	0.0047MF	10%	400V	
C618		1-104-989-91	FILM	0.0022MF	5%	200V	
C621	⚠	1-136-519-12	FILM	0.47MF	20%	300V	
C622	⚠	1-136-518-12	FILM	0.33MF	20%	300V	
C624	⚠	1-113-890-61	CERAMIC	0.0022MF	20%	250V	
C626	⚠	1-164-503-61	CERAMIC	0.0022MF	20%	400V	
C627		1-126-940-11	ELECT	330MF	20%	25V	
C628		1-126-965-11	ELECT	22MF	20%	50V	
C629		1-162-599-12	CERAMIC	0.0047MF		250V	
C630		1-162-599-12	CERAMIC	0.0047MF		250V	
C631	⚠	1-161-964-91	CERAMIC	0.0047MF		250V	
C632	⚠	1-162-580-51	CERAMIC	0.01MF		400V	

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REF.NO.		PART NO.	DESCRIPTION				REMARK
C633		1-125-555-11	ELECT	330MF	20%	400V	
C635		1-136-165-00	FILM	0.1MF	5%	50V	
C636		1-136-165-00	FILM	0.1MF	5%	50V	
C637		1-126-964-11	ELECT	10MF	20%	50V	
C642	⚠	1-162-580-51	CERAMIC	0.01MF		400V	
C648		1-101-001-00	CERAMIC	0.001MF		50V	
C650		1-126-964-11	ELECT	10MF	20%	50V	
C651		1-136-171-00	FILM	0.33MF	5%	50V	
C662		1-124-563-11	ELECT	2200MF	20%	25V	
C663		1-126-964-11	ELECT	10MF	20%	50V	
C664		1-102-129-00	CERAMIC	0.01MF	10%	50V	
C665		1-126-940-11	ELECT	330MF	20%	25V	

< CONNECTOR >

REF.NO.		PART NO.	DESCRIPTION	REMARK
CN0008	⚠	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CN0009	⚠	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN0010	⚠	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN0701		1-573-299-21	CONNECTOR, BOARD TO BOARD 10P	
CN0702		1-695-300-11	CONNECTOR, BOARD TO BOARD 20P	
CN0703	⚠	*1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P	

< DIODE >

REF.NO.		PART NO.	DESCRIPTION	REMARK
D601		8-719-510-53	DIODE D4SB60L	
D602		8-719-991-33	DIODE 1SS133T-77	
D603		8-719-109-89	DIODE RD5.6ESB2	
D605		8-719-047-31	DIODE RBA-402L	
D607		8-719-510-12	DIODE D10SC4M	
		4-382-854-11	SCREW (M3X10), P, SW (+) ; D607	
D608		8-719-510-12	DIODE D10SC4M	
		4-382-854-11	SCREW (M3X10), P, SW (+) ; D608	
D609		8-719-047-31	DIODE RBA-402L	
D610		8-719-312-39	DIODE R2K-V1	
D611		8-719-510-64	DIODE S2LA20F	
D614		8-719-911-19	DIODE 1SS119-25	
D615		8-719-911-19	DIODE 1SS119-25	
D616		8-719-911-19	DIODE 1SS119-25	
D617		8-719-911-19	DIODE 1SS119-25	
D618		8-719-911-19	DIODE 1SS119-25	
D619		8-719-911-19	DIODE 1SS119-25	
D620		8-719-911-19	DIODE 1SS119-25	
D621		8-719-911-19	DIODE 1SS119-25	
D622		8-719-510-64	DIODE S2LA20F	
D623		8-719-510-64	DIODE S2LA20F	
D625		8-719-911-19	DIODE 1SS119-25	
D626		8-719-911-19	DIODE 1SS119-25	
D627		8-719-911-19	DIODE 1SS119-25	
D628		8-719-911-19	DIODE 1SS119-25	
D630		8-719-991-33	DIODE 1SS133T-77	
D633		8-719-991-33	DIODE 1SS133T-77	
D634		8-719-510-64	DIODE S2LA20F	
D635		8-719-991-33	DIODE 1SS133T-77	
D636		8-719-511-40	DIODE S1VB40	

< FERRITE BEAD >

REF.NO.		PART NO.	DESCRIPTION	REMARK
FB601		1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB602		1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB603		1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB604		1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	

< IC >

REF.NO.		PART NO.	DESCRIPTION	REMARK
IC601		1-810-051-11	POWER MODULE DM-48	
IC602	⚠	8-749-010-64	PHOTO COUPLER PC123FY2	
IC603		8-759-510-52	IC TEA7605	

< COIL >

REF.NO.		PART NO.	DESCRIPTION		REMARK
L605		1-412-523-11	INDUCTOR	6.8UH	
L606		1-412-523-11	INDUCTOR	6.8UH	

< TRANSFORMER >

REF.NO.		PART NO.	DESCRIPTION	REMARK
LF602	⚠	1-429-860-11	TRANSFORMER, LINE FILTER	

< IC LINK >

REF.NO.		PART NO.	DESCRIPTION	REMARK
PS601	⚠	1-801-550-21	PROTECTOR MODULE 2.5A MP250	
PS602	⚠	1-801-550-21	PROTECTOR MODULE 2.5A MP250	
PS604	⚠	1-801-550-21	PROTECTOR MODULE 2.5A MP250	
PS605	⚠	1-801-549-21	PROTECTOR MODULE 4.0A MP400	

< TRANSISTOR >

REF.NO.		PART NO.	DESCRIPTION	REMARK
Q601		8-729-032-87	TRANSISTOR 2SC4834NP-F09	
		4-382-854-11	SCREW (M3X10), P, SW (+) ; Q601	
Q602		8-729-032-87	TRANSISTOR 2SC4834NP-F09	
		4-382-854-11	SCREW (M3X10), P, SW (+) ; Q602	
Q603		8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q604		8-729-200-21	TRANSISTOR 2SC2500-B	
Q605		8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q608		8-729-200-21	TRANSISTOR 2SC2500-B	
Q610		8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q611		8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q612		8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q615		8-729-200-21	TRANSISTOR 2SC2500-B	
Q621		8-729-200-21	TRANSISTOR 2SC2500-B	

< RESISTOR >

REF.NO.		PART NO.	DESCRIPTION				REMARK
R601		1-202-933-61	FUSIBLE	0.1	10%	1/2W	F
R602		1-247-891-00	CARBON	330K	5%	1/4W	
R603		1-247-891-00	CARBON	330K	5%	1/4W	
R604		1-216-369-00	METAL OXIDE	1	5%	2W	F
R605		1-247-891-00	CARBON	330K	5%	1/4W	
R606		1-247-891-00	CARBON	330K	5%	1/4W	
R607		1-216-369-00	METAL OXIDE	1	5%	2W	F
R608		1-247-887-00	CARBON	220K	5%	1/4W	
R609		1-249-429-11	CARBON	10K	5%	1/4W	F
R610		1-249-419-11	CARBON	1.5K	5%	1/4W	F
R611		1-249-377-11	CARBON	0.47	5%	1/4W	F
R616	⚠	1-205-949-11	WIREWOUND	1.8	5%	10W	
R617	⚠	1-205-949-11	WIREWOUND	1.8	5%	10W	
R619	⚠	1-244-945-91	CARBON	1M	5%	1/2W	
R620	⚠	1-218-265-11	METAL	8.2M	5%	1W	
R621		1-249-417-11	CARBON	1K	5%	1/4W	F
R622		1-249-430-11	CARBON	12K	5%	1/4W	
R623		1-249-436-11	CARBON	39K	5%	1/4W	
R624		1-249-425-11	CARBON	4.7K	5%	1/4W	
R625		1-247-815-91	CARBON	220	5%	1/4W	
R626		1-247-863-91	CARBON	22K	5%	1/4W	
R627		1-247-815-91	CARBON	220	5%	1/4W	
R628		1-247-807-31	CARBON	100	5%	1/4W	
R629		1-249-428-11	CARBON	8.2K	5%	1/4W	
R636		1-207-905-00	WIREWOUND	0.27	10%	2W	F

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REF.NO.	PART NO.	DESCRIPTION	REMARK
R637	1-249-389-11	CARBON 4.7 5% 1/4W	F
R639	1-247-791-91	CARBON 22 5% 1/4W	
R640	1-247-791-91	CARBON 22 5% 1/4W	
R641	1-247-791-91	CARBON 22 5% 1/4W	
R642	1-247-791-91	CARBON 22 5% 1/4W	
R651	1-215-880-00	METAL OXIDE 10 5% 2W	F
R652	1-247-891-00	CARBON 330K 5% 1/4W	
R653	1-247-891-00	CARBON 330K 5% 1/4W	
R654	1-247-891-00	CARBON 330K 5% 1/4W	
R655	1-247-891-00	CARBON 330K 5% 1/4W	
R656	1-249-439-11	CARBON 68K 5% 1/4W	
R657	1-249-429-11	CARBON 10K 5% 1/4W	
R658	1-249-421-11	CARBON 2.2K 5% 1/4W	
R659	1-249-425-11	CARBON 4.7K 5% 1/4W	
R660	1-249-429-11	CARBON 10K 5% 1/4W	
R661	1-249-421-11	CARBON 2.2K 5% 1/4W	
R662	1-249-421-11	CARBON 2.2K 5% 1/4W	
R663	1-249-429-11	CARBON 10K 5% 1/4W	
R664	1-249-429-11	CARBON 10K 5% 1/4W	
R667	1-249-377-11	CARBON 0.47 5% 1/4W	F
R670	1-249-417-11	CARBON 1K 5% 1/4W	
		< RELAY >	
RY601	⚠ 1-755-167-11	RELAY, AC POWER	
RY602	⚠ 1-755-167-11	RELAY, AC POWER	
		< TRANSFORMER >	
T601	⚠ 1-429-844-11	TRANSFORMER, CONVERTER (PIT)	
T602	⚠ 1-429-254-11	TRANSFORMER, CONVERTER (PRT)	
T603	⚠ 1-429-952-11	TRANSFORMER	
		< THERMISTOR >	
THP601	⚠ 1-809-827-11	THERMISTOR, POSITIVE	
		< VARISTOR >	
VDR601	1-810-977-21	VARISTOR ERZV10D621	
**			
	*A-1638-096-A	C BOARD, COMPLETE	
		*****************	
		< CAPACITOR >	
C701	1-107-666-11	ELECT 1MF 20% 350V	
C702	1-107-666-11	ELECT 1MF 20% 350V	
C703	1-107-666-11	ELECT 1MF 20% 350V	
C704	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C705	1-126-941-11	ELECT 470MF 20% 16V	
C706	1-126-941-11	ELECT 470MF 20% 16V	
C708	1-126-941-11	ELECT 470MF 20% 16V	
C709	1-102-157-00	CERAMIC 560PF 10% 500V	
C710	1-102-157-00	CERAMIC 560PF 10% 500V	
C711	1-102-157-00	CERAMIC 560PF 10% 500V	
C712	1-126-965-11	ELECT 22MF 20% 50V	
C713	1-162-116-00	CERAMIC 680PF 10% 2KV	
C714	1-162-115-00	CERAMIC 330PF 10% 2KV	
C716	1-162-116-00	CERAMIC 680PF 10% 2KV	
C717	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C718	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C719	1-124-903-11	ELECT 1MF 20% 50V	
C720	1-123-947-00	ELECT 10MF 20% 250V	
C723	1-162-116-00	CERAMIC 680PF 10% 2KV	
		< CONNECTOR >	
CN0004	1-695-915-11	TAB (CONTACT)	
CN0403	*1-564-512-11	PLUG, CONNECTOR 9P	
CN0421	*1-508-767-00	PIN, CONNECTOR (5MM PITCH) 5P	
		< DIODE >	
D701	8-719-991-33	DIODE 1SS133T-77	
D702	8-719-901-83	DIODE 1SS83	
D703	8-719-901-83	DIODE 1SS83	
D704	8-719-901-83	DIODE 1SS83	
D705	8-719-991-33	DIODE 1SS133T-77	
D706	8-719-908-03	DIODE GP08D	
D707	8-719-991-33	DIODE 1SS133T-77	
D712	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D714	8-719-921-88	DIODE MTZJ-13B	
D715	8-719-911-19	DIODE 1SS119-25	
D716	8-719-911-19	DIODE 1SS119-25	
D717	8-719-911-19	DIODE 1SS119-25	
D718	8-719-982-96	DIODE MTZJ-T-77-2.2A	
D719	8-719-982-96	DIODE MTZJ-T-77-2.2A	
D720	8-719-901-83	DIODE 1SS83	
D721	8-719-901-83	DIODE 1SS83	
D722	8-719-901-83	DIODE 1SS83	
D723	8-719-901-83	DIODE 1SS83	
D724	8-719-018-82	DIODE RGP02-20EL-6394	
		< IC >	
IC703	8-759-073-90	IC TDA6111Q	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; IC703	
IC704	8-759-073-90	IC TDA6111Q	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; IC704	
IC705	8-759-073-90	IC TDA6111Q	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; IC705	
		< CRT SOCKET >	
J701	⚠ 1-526-990-21	SOCKET, CRT	
		< COIL >	
L701	1-410-671-31	INDUCTOR 47UH	
L704	1-408-405-00	INDUCTOR 4.7UH	
L705	1-408-405-00	INDUCTOR 4.7UH	
L706	1-408-405-00	INDUCTOR 4.7UH	
L709	1-408-409-00	INDUCTOR 10UH	
L710	1-412-528-11	INDUCTOR 18UH	
		< TRANSISTOR >	
Q701	8-729-255-12	TRANSISTOR 2SC2551-O	
Q702	8-729-255-12	TRANSISTOR 2SC2551-O	
Q703	8-729-255-12	TRANSISTOR 2SC2551-O	
Q704	8-729-026-41	TRANSISTOR 2SA933AS-QRT	
Q705	8-729-029-56	TRANSISTOR DTA144ESA	
Q706	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q707	8-729-173-38	TRANSISTOR 2SA733-K	
		< RESISTOR >	
R701	1-249-420-11	CARBON 1.8K 5% 1/4W	
R702	1-249-425-11	CARBON 4.7K 5% 1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R703	1-249-435-11	CARBON	33K	5%	1/4W	
R704	1-249-429-11	CARBON	10K	5%	1/4W	
R705	1-249-430-11	CARBON	12K	5%	1/4W	
R706	1-247-863-91	CARBON	22K	5%	1/4W	
R707	1-247-863-91	CARBON	22K	5%	1/4W	
R708	1-247-863-91	CARBON	22K	5%	1/4W	
R709	1-249-416-11	CARBON	820	5%	1/4W	
R710	1-249-416-11	CARBON	820	5%	1/4W	
R711	1-249-416-11	CARBON	820	5%	1/4W	
R712	1-249-421-11	CARBON	2.2K	5%	1/4W	
R713	1-249-417-11	CARBON	1K	5%	1/4W	
R714	1-249-417-11	CARBON	1K	5%	1/4W	
R715	1-249-417-11	CARBON	1K	5%	1/4W	
R716	1-249-417-11	CARBON	1K	5%	1/4W	
R717	1-249-417-11	CARBON	1K	5%	1/4W	
R718	1-249-417-11	CARBON	1K	5%	1/4W	
R719	1-249-417-11	CARBON	1K	5%	1/4W	
R720	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R721	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R722	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R723	1-249-408-11	CARBON	180	5%	1/4W	
R724	1-249-408-11	CARBON	180	5%	1/4W	
R725	1-249-408-11	CARBON	180	5%	1/4W	
R726	1-202-565-00	SOLID	470	20%	1/2W	
R727	1-202-565-00	SOLID	470	20%	1/2W	
R728	1-202-565-00	SOLID	470	20%	1/2W	
R729	1-249-424-11	CARBON	3.9K	5%	1/4W	
R730	1-249-424-11	CARBON	3.9K	5%	1/4W	
R731	1-249-424-11	CARBON	3.9K	5%	1/4W	
R732	1-202-549-00	SOLID	100	20%	1/2W	
R733	1-247-863-91	CARBON	22K	5%	1/4W	
R734	1-202-549-00	SOLID	100	20%	1/2W	
R735	1-249-416-11	CARBON	820	5%	1/4W	
R741	1-202-884-11	SOLID	820K	20%	1/2W	
R743	1-202-884-11	SOLID	820K	20%	1/2W	
R750	1-249-429-11	CARBON	10K	5%	1/4W	
R751	1-249-438-11	CARBON	56K	5%	1/4W	
R752	1-249-417-11	CARBON	1K	5%	1/4W	F
R753	1-215-911-11	METAL OXIDE	100	5%	3W	F
R754	1-202-841-00	SOLID	180K	20%	1/2W	
R755	1-249-429-11	CARBON	10K	5%	1/4W	
R756	1-249-432-11	CARBON	18K	5%	1/4W	
R757	1-249-431-11	CARBON	15K	5%	1/4W	

< VARIABLE RESISTOR >

RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M
RV704	1-241-656-21	RES, ADJ, METAL FILM 110M

****

*A-1640-245-A D BOARD, COMPLETE
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< CAPACITOR >

C101	1-126-965-11	ELECT	22MF	20%	50V
C236	1-136-165-00	FILM	0.1MF	5%	50V
C237	1-136-165-00	FILM	0.1MF	5%	50V
C238	1-126-967-11	ELECT	47MF	20%	16V
C241	1-126-967-11	ELECT	47MF	20%	16V
C242	1-126-953-11	ELECT	2200MF	20%	35V
C243	1-136-165-00	FILM	0.1MF	5%	50V
C244	1-126-953-11	ELECT	2200MF	20%	35V
C245	1-136-165-00	FILM	0.1MF	5%	50V
C260	1-126-964-11	ELECT	10MF	20%	50V
C261	1-126-964-11	ELECT	10MF	20%	50V
C262	1-104-665-11	ELECT	100MF	20%	25V
C263	1-136-165-00	FILM	0.1MF	5%	50V
C264	1-126-933-11	ELECT	100MF	20%	16V
C265	1-136-165-00	FILM	0.1MF	5%	50V
C266	1-104-665-11	ELECT	100MF	20%	25V
C267	1-162-318-11	CERAMIC	0.001MF	10%	500V
C268	1-162-318-11	CERAMIC	0.001MF	10%	500V
C269	1-126-967-11	ELECT	47MF	20%	16V
C270	1-136-165-00	FILM	0.1MF	5%	50V
C271	1-126-965-11	ELECT	22MF	20%	50V
C272	1-136-165-00	FILM	0.1MF	5%	50V
C273	1-136-161-00	FILM	0.047MF	5%	50V
C274	1-124-925-11	ELECT	2.2MF	20%	50V
C275	1-124-925-11	ELECT	2.2MF	20%	50V
C276	1-126-967-11	ELECT	47MF	20%	16V
C277	1-126-934-11	ELECT	220MF	20%	16V
C278	1-107-714-11	ELECT	10MF	20%	16V
C279	1-126-965-11	ELECT	22MF	20%	50V
C280	1-136-169-00	FILM	0.22MF	5%	50V
C281	1-126-967-11	ELECT	47MF	20%	16V
C283	1-136-169-00	FILM	0.22MF	5%	50V
C620	1-126-963-11	ELECT	4.7MF	20%	50V
C639	1-126-964-11	ELECT	10MF	20%	50V
C652	1-136-171-00	FILM	0.33MF	5%	50V
C653	1-104-661-91	ELECT	330MF	20%	16V
C654	1-104-664-11	ELECT	47MF	20%	25V
C656	1-126-967-11	ELECT	47MF	20%	16V
C657	1-136-165-00	FILM	0.1MF	5%	50V
C658	1-136-165-00	FILM	0.1MF	5%	50V
C659	1-136-165-00	FILM	0.1MF	5%	50V
C660	1-136-164-00	FILM	0.082MF	5%	50V
C666	1-104-661-91	ELECT	330MF	20%	16V
C667	1-136-165-00	FILM	0.1MF	5%	50V
C668	1-136-165-00	FILM	0.1MF	5%	50V
C669	1-136-165-00	FILM	0.1MF	5%	50V
C670	1-136-165-00	FILM	0.1MF	5%	50V
C671	1-136-165-00	FILM	0.1MF	5%	50V
C801	1-123-024-21	ELECT	33MF		160V
C802	1-136-207-11	FILM	0.047MF	10%	250V
C804	1-102-110-00	CERAMIC	220PF	10%	50V
C805	1-102-117-00	CERAMIC	820PF	10%	50V
C808	1-162-116-00	CERAMIC	680PF	10%	2KV
C809	1-162-116-00	CERAMIC	680PF	10%	2KV
C810	1-136-558-11	FILM	0.0039MF	10%	400V
C811	1-109-948-11	FILM	0.015MF	3%	2.5KV
C812	1-136-759-11	FILM	0.039MF	5%	630V
C813	1-107-804-11	FILM	0.82MF	5%	400V
C814	1-129-702-00	FILM	0.001MF	10%	400V
C816	1-109-844-11	FILM	0.68MF	5%	400V
C817	1-136-759-11	FILM	0.039MF	5%	630V
C819	1-137-104-11	FILM	0.033MF	10%	250V
C822	1-126-967-11	ELECT	47MF	20%	50V
C823	1-102-129-00	CERAMIC	0.01MF	10%	50V
C824	1-162-117-00	CERAMIC	100PF	10%	500V
C825	1-126-964-11	ELECT	10MF	20%	50V
C827	1-102-228-00	CERAMIC	470PF	10%	500V

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REF.NO.	PART NO.	DESCRIPTION			REMARK
C835	1-107-655-11	ELECT	47MF	20%	250V
C836	1-102-228-00	CERAMIC	470PF	10%	500V
C837	1-102-228-00	CERAMIC	470PF	10%	500V
C838	1-102-228-00	CERAMIC	470PF	10%	500V
C841	1-106-375-12	MYLAR	0.022MF	10%	250V
C848	1-162-129-00	CERAMIC	150PF	10%	2KV
C849	1-162-129-00	CERAMIC	150PF	10%	2KV
C851	1-129-702-00	FILM	0.001MF	10%	400V
C852	1-126-968-11	ELECT	100MF	20%	50V
C854	1-102-129-00	CERAMIC	0.01MF	10%	50V
C855	1-126-941-11	ELECT	470MF	20%	25V
C856	1-102-129-00	CERAMIC	0.01MF	10%	50V
C857	1-126-941-11	ELECT	470MF	20%	25V
C860	1-106-220-00	MYLAR	0.1MF	10%	100V
C861	1-137-423-11	MYLAR	0.15MF	10%	100V
C862	1-130-789-00	FILM	1MF	5%	100V
C863	1-130-489-00	FILM	0.033MF	5%	50V
C866	1-137-040-11	FILM	0.0022MF	10%	400V
C867	1-107-909-11	ELECT	47MF	20%	50V
C871	1-136-562-11	FILM	0.0082MF	5%	630V
C872	1-106-220-00	FILM	0.1MF	10%	100V
C873	1-162-115-00	CERAMIC	330PF	10%	2KV
C874	1-164-645-11	CERAMIC	1000PF	10%	500V
C876	1-137-040-11	FILM	0.0022MF	10%	400V
C878	1-106-220-00	FILM	0.1MF	10%	100V
C907	1-124-903-11	ELECT	1MF	20%	50V
C908	1-124-903-11	ELECT	1MF	20%	50V
C910	1-126-967-11	ELECT	47MF	20%	50V
C911	1-126-967-11	ELECT	47MF	20%	50V
C1601	1-102-973-00	CERAMIC	100PF	5%	50V
C1602	1-136-161-00	FILM	0.047MF	5%	50V
C1603	1-102-129-00	CERAMIC	0.01MF	10%	50V
C1605	1-136-205-11	FILM	0.022MF	10%	400V
C1606	1-136-250-11	FILM	0.001MF	3%	100V
C1607	1-136-207-11	FILM	0.047MF	10%	250V
C1616	1-129-702-00	FILM	0.001MF	5%	630V
C1619	1-137-499-11	FILM	0.015MF	5%	630V
C1620	1-102-110-00	CERAMIC	220PF	10%	50V
C1621	1-137-102-11	FILM	0.022MF	10%	250V
C1622	1-130-785-11	FILM	0.47MF	10%	100V
C1624	1-101-004-00	CERAMIC	0.01MF		50V
C1625	1-126-952-11	ELECT	1000MF	20%	16V
C1627	1-136-244-11	FILM	0.1MF	5%	50V
C1628	1-136-244-11	FILM	0.1MF	5%	50V
C1632	1-136-203-11	FILM	0.01MF	10%	250V
C1633	1-126-964-11	ELECT	10MF	20%	50V
C1818	1-129-928-00	FILM	0.0027MF	5%	630V
C2701	1-126-964-11	ELECT	10MF	20%	50V
C2702	1-104-664-11	ELECT	47MF	20%	25V
C2706	1-102-820-00	CERAMIC	330PF	5%	50V

< CONNECTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN0001	*1-564-520-11	PLUG, CONNECTOR 5P	
CN0002	*1-568-878-51	PIN, CONNECTOR 3P	
CN0004	1-568-878-51	PIN, CONNECTOR 3P	
CN0005	1-695-915-11	TAB (CONTACT)	
CN0101	*1-573-296-21	CONNECTOR, BOARD TO BOARD 10P	
CN0102	1-695-297-11	CONNECTOR, BOARD TO BOARD 20P	
CN0103	*1-564-509-11	PLUG, CONNECTOR 6P	
CN0521	*1-508-767-00	PIN, CONNECTOR (5MM PITCH) 5P	
CN0722 ⚠	*1-580-844-11	PIN, CONNECTOR (POWER)	
CN0723 ⚠	*1-695-292-11	PIN, CONNECTOR (POWER)	
CN0740	*1-568-880-51	PIN, CONNECTOR 5P	
CN0741	*1-564-512-11	PLUG, CONNECTOR 9P	
CN0743	*1-564-596-11	PLUG, CONNECTOR 15P	
CN0745	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P	
CN0747	*1-568-880-51	PIN, CONNECTOR 5P	
CN0101	*1-573-296-21	CONNECTOR, BOARD TO BOARD 10P	
CN0102	1-695-297-11	CONNECTOR, BOARD TO BOARD 20P	
CN0103	*1-564-509-11	PLUG, CONNECTOR 6P	
CN0521	*1-508-767-00	PIN, CONNECTOR (5MM PITCH) 5P	
CN0722	*1-580-844-11	PIN, CONNECTOR (POWER)	
CN0723	*1-695-292-11	PIN, CONNECTOR (POWER)	
CN0740	*1-568-880-51	PIN, CONNECTOR 5P	
CN0741	*1-564-512-11	PLUG, CONNECTOR 9P	
CN0748	*1-564-512-11	PLUG, CONNECTOR 9P	
CN0749	*1-568-879-11	PIN, CONNECTOR 4P	
CN0750	*1-568-880-51	PIN, CONNECTOR 5P	
CN3133	1-568-882-51	PIN, CONNECTOR 7P	

< DIODE >

REF.NO.	PART NO.	DESCRIPTION	REMARK
D101	8-719-982-27	DIODE MTZJ-33C	
D236	8-719-911-19	DIODE 1SS119-25	
D237	8-719-911-19	DIODE 1SS119-25	
D238	8-719-911-19	DIODE 1SS119-25	
D239	8-719-911-19	DIODE 1SS119-25	
D262	8-719-911-19	DIODE 1SS119-25	
D264	8-719-911-19	DIODE 1SS119-25	
D276	8-719-911-19	DIODE 1SS119-25	
D278	8-719-911-19	DIODE 1SS119-25	
D279	8-719-911-19	DIODE 1SS119-25	
D280	8-719-911-19	DIODE 1SS119-25	
D281	8-719-911-19	DIODE 1SS119-25	
D282	8-719-911-19	DIODE 1SS119-25	
D612	8-719-911-19	DIODE 1SS119-25	
D613	8-719-911-19	DIODE 1SS119-25	
D631	8-719-911-19	DIODE 1SS119-25	
D632	8-719-911-19	DIODE 1SS119-25	
D633	8-719-911-19	DIODE 1SS119-25	
D802	8-719-979-99	DIODE ERD08M-15	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; D802	
D803	8-719-043-14	DIODE ESAD39M-06C	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; D803	
D804	8-719-971-20	DIODE ERC38-06	
D805	8-719-908-03	DIODE GP08D	
D806	8-719-908-03	DIODE GP08D	
D810	8-719-979-85	DIODE EGP20G	
D811	8-719-302-43	DIODE EL1Z	
D812	8-719-510-64	DIODE S2LA20F	
D813	8-719-510-26	DIODE D1NL20	
D814	8-719-908-03	DIODE GP08D	
D815	8-719-110-13	DIODE RD9.1ESB2	
D816	8-719-110-41	DIODE RD15ES-B2	
D817	8-719-911-19	DIODE 1SS119-25	
D818	8-719-911-19	DIODE 1SS119-25	
D819	8-719-911-19	DIODE 1SS119-25	
D871	8-719-911-19	DIODE 1SS119-25	
D873	8-719-911-19	DIODE 1SS119-25	
D874	8-719-911-19	DIODE 1SS119-25	
D1602	8-719-911-19	DIODE 1SS119-25	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
D1603	8-719-911-19	DIODE 1SS119-25	
D1604	8-719-970-87	DIODE ERA38-06	
D1605	8-719-970-87	DIODE ERA38-06	
D1609	8-719-979-85	DIODE EGP20G	
D1612	8-719-110-08	DIODE RD8.2ES-B2	
D2701	8-719-911-19	DIODE 1SS119-25	
D2702	8-719-911-19	DIODE 1SS119-25	

< CONNECTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
DY1	*1-580-798-11	CONNECTOR PIN (DY) 6P	

< FUSE >

REF.NO.	PART NO.	DESCRIPTION	REMARK
F601	⚠ 1-532-505-41	FUSE 5A/250V	
	⚠ *1-533-725-11	HOLDER, FUSE ; F601	

< FERRITE BEAD >

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB801	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	

< IC >

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC236	8-759-190-89	IC TDA7265	
	4-202-373-01	SPRING, IC ; IC236	
	4-202-710-01	SPACER, INSULATING ; IC236	
IC260	8-759-330-93	IC TDA7309	
IC261	8-759-502-21	IC TDA2822M	
IC603	8-759-095-34	IC LM2940T-8.0	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; IC603	
IC604	8-759-513-71	IC PQ05RF21	
	4-202-373-01	SPRING, IC ; IC604	
IC606	8-759-991-43	IC LM78L12ACZ	
IC607	8-759-513-71	IC PQ05RF21	
	4-202-373-01	SPRING, IC ; IC607	
IC801	8-759-103-93	IC UPC393C	
IC802	8-759-192-71	IC STV9379	
	4-202-373-01	SPRING, IC ; IC802	
IC1601	8-759-103-93	IC UPC393C	
IC1603	8-759-103-93	IC UPC393C	
IC2701	8-759-603-37	IC M5216P	

< SOCKET >

REF.NO.	PART NO.	DESCRIPTION	REMARK
J1200	1-770-218-11	JACK, PIN	

< COIL >

REF.NO.	PART NO.	DESCRIPTION	REMARK
L602	1-412-525-31	INDUCTOR 10UH	
L603	1-412-525-31	INDUCTOR 10UH	
L802	1-459-474-11	COIL (WITH CORE)	
L803	1-459-474-11	COIL (WITH CORE)	
L806	1-459-592-11	COIL (WITH CORE) (PMC)	
L807	1-412-524-11	INDUCTOR 8.2UH	
L811	1-459-104-00	COIL, WITH CORE	
L814	1-422-613-11	COIL, AIR CORE	
L815	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
L816	1-408-947-00	INDUCTOR 2.2MMH	
L1602	1-459-474-11	COIL (WITH CORE)	
L1605	1-459-104-00	COIL (WITH CORE)	
L1622	1-406-675-11	COIL, CHOKE 4.7MMH	

< IC LINK >

REF.NO.	PART NO.	DESCRIPTION	REMARK
PS1601	⚠ 1-532-637-91	LINK, IC 1A (ICP-N25)	

< TRANSISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q276	8-729-030-03	TRANSISTOR DTC144ESA-TP	
Q277	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q278	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q279	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q280	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q281	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q282	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q606	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q607	8-729-029-56	TRANSISTOR DTA144ESA	
Q613	8-729-030-03	TRANSISTOR DTC144ESA-TP	
Q614	8-729-029-56	TRANSISTOR DTA144ESA	
Q616	8-729-030-03	TRANSISTOR DTC144ESA-TP	
Q617	8-729-029-67	TRANSISTOR DTC114ESA-TP	
Q618	8-729-029-56	TRANSISTOR DTA144ESA	
Q620	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q624	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q801	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q802	8-729-821-07	TRANSISTOR 2SC3997CA	
	4-200-399-01	SPACER, IC ; Q802	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; Q802	
Q803	8-729-039-68	TRANSISTOR IRF620	
	4-200-399-01	SPACER, IC ; Q803	
Q804	8-729-039-68	TRANSISTOR IRF620	
Q1601	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1602	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1603	8-729-011-06	TRANSISTOR 2SC3840K	
Q1610	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1611	8-729-931-45	TRANSISTOR IRF614	
Q2701	8-729-119-78	TRANSISTOR 2SC2785-HFE	

< RESISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
R236	1-249-424-11	CARBON 3.9K 5% 1/4W	
R237	1-249-417-11	CARBON 1K 5% 1/4W	
R239	1-249-424-11	CARBON 3.9K 5% 1/4W	
R240	1-249-417-11	CARBON 1K 5% 1/4W	
R244	1-249-413-11	CARBON 470 5% 1/4W	
R245	1-249-430-11	CARBON 12K 5% 1/4W	
R246	1-249-430-11	CARBON 12K 5% 1/4W	
R247	1-249-413-11	CARBON 470 5% 1/4W	
R248	1-249-425-11	CARBON 4.7K 5% 1/4W	
R249	1-216-357-00	METAL OXIDE 4.7 5% 1W	F
R250	1-216-357-00	METAL OXIDE 4.7 5% 1W	F
R251	1-249-429-11	CARBON 10K 5% 1/4W	
R252	1-249-429-11	CARBON 10K 5% 1/4W	
R255	1-249-411-11	CARBON 330 5% 1/4W	
R256	1-249-411-11	CARBON 330 5% 1/4W	
R260	1-247-863-91	CARBON 22K 5% 1/4W	
R261	1-247-863-91	CARBON 22K 5% 1/4W	
R262	1-249-421-11	CARBON 2.2K 5% 1/4W	
R263	1-249-421-11	CARBON 2.2K 5% 1/4W	
R264	1-212-857-00	FUSIBLE 10 5% 1/4W	F
R265	1-249-389-11	CARBON 4.7 5% 1/4W	F
R266	1-249-389-11	CARBON 4.7 5% 1/4W	F
R267	1-247-815-91	CARBON 220 5% 1/4W	
R268	1-247-815-91	CARBON 220 5% 1/4W	
R269	1-249-415-11	CARBON 680 5% 1/4W	
R270	1-249-415-11	CARBON 680 5% 1/4W	
R271	1-247-742-11	CARBON 180 5% 1/2W	F
R277	1-249-419-11	CARBON 1.5K 5% 1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R278	1-249-441-11	CARBON	100K	5%	1/4W	
R279	1-249-429-11	CARBON	10K	5%	1/4W	
R280	1-249-425-11	CARBON	4.7K	5%	1/4W	
R281	1-249-437-11	CARBON	47K	5%	1/4W	
R282	1-249-430-11	CARBON	12K	5%	1/4W	
R283	1-249-429-11	CARBON	10K	5%	1/4W	
R284	1-249-432-11	CARBON	18K	5%	1/4W	
R285	1-249-425-11	CARBON	4.7K	5%	1/4W	
R286	1-249-421-11	CARBON	2.2K	5%	1/4W	
R287	1-249-412-11	CARBON	390	5%	1/4W	
R288	1-249-421-11	CARBON	2.2K	5%	1/4W	
R289	1-249-421-11	CARBON	2.2K	5%	1/4W	
R290	1-247-807-31	CARBON	100	5%	1/4W	
R291	1-249-421-11	CARBON	2.2K	5%	1/4W	
R292	1-249-429-11	CARBON	10K	5%	1/4W	
R293	1-249-429-11	CARBON	10K	5%	1/4W	
R294	1-249-429-11	CARBON	10K	5%	1/4W	
R295	1-247-885-00	CARBON	180K	5%	1/4W	
R296	1-247-885-00	CARBON	180K	5%	1/4W	
R297	1-247-807-31	CARBON	100	5%	1/4W	
R298	1-247-807-31	CARBON	100	5%	1/4W	
R630	1-249-429-11	CARBON	10K	5%	1/4W	
R631	1-215-477-00	METAL	220K	1%	1/4W	
R632	1-249-417-11	CARBON	1K	5%	1/4W	
R633	1-249-429-11	CARBON	10K	5%	1/4W	
R634	1-247-895-91	CARBON	470K	5%	1/4W	
R635	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R638	1-249-425-11	CARBON	4.7K	5%	1/4W	
R644	1-249-425-11	CARBON	4.7K	5%	1/4W	
R645	1-249-410-11	CARBON	270	5%	1/4W	
R646	1-249-403-11	CARBON	68	5%	1/4W	
R647	1-249-420-11	CARBON	1.8K	5%	1/4W	
R665	1-249-425-11	CARBON	4.7K	5%	1/4W	
R666	1-249-413-11	CARBON	470	5%	1/4W	
R676	1-249-437-11	CARBON	47K	5%	1/4W	
R677	1-249-437-11	CARBON	47K	5%	1/4W	
R678	1-249-421-11	CARBON	2.2K	5%	1/4W	
R679	1-247-815-91	CARBON	220	5%	1/4W	
R802	1-215-916-00	METAL OXIDE	680	5%	3W	F
R803	1-215-916-00	METAL OXIDE	680	5%	3W	F
R804	1-215-916-00	METAL OXIDE	680	5%	3W	F
R805	1-215-923-00	METAL OXIDE	10K	5%	3W	F
R806	1-249-411-11	CARBON	330	5%	1/4W	
R807	1-247-843-11	CARBON	3.3K	5%	1/4W	
R808	1-216-381-11	METAL OXIDE	0.22	5%	3W	F
R809	1-215-880-00	METAL OXIDE	10	5%	2W	F
R810	1-215-914-11	METAL OXIDE	330	5%	3W	F
R811	1-216-434-11	METAL OXIDE	1.8K	5%	1W	F
R817	1-202-972-61	FUSIBLE	1	5%	1/4W	F
R818	1-249-377-11	CARBON	0.47	5%	1/4W	F
R819	1-249-377-11	CARBON	0.47	5%	1/4W	F
R820	1-214-907-00	METAL	56K	1%	1/2W	
R821	1-249-425-11	CARBON	4.7K	5%	1/4W	
R823	1-249-420-11	CARBON	1.8K	5%	1/4W	
R834	1-247-887-00	CARBON	220K	5%	1/4W	
R835	1-249-432-11	CARBON	18K	5%	1/4W	
R837	1-249-422-11	CARBON	2.7K	5%	1/4W	
R843	1-202-822-00	SOLID	2.2K	20%	1/2W	
R844	1-249-424-11	CARBON	3.9K	5%	1/4W	
R845	1-247-881-00	CARBON	120K	5%	1/4W	
R846	1-249-422-11	CARBON	2.7K	5%	1/4W	
R847	1-249-437-11	CARBON	47K	5%	1/4W	
R848	1-249-425-11	CARBON	4.7K	5%	1/4W	
R849	1-249-429-11	CARBON	10K	5%	1/4W	
R850	1-249-389-11	CARBON	4.7	5%	1/4W	F
R851	1-216-399-00	METAL OXIDE	6.8	5%	3W	F
R852	1-247-901-11	CARBON	820K	5%	1/4W	
R853	1-247-889-00	CARBON	270K	5%	1/4W	
R854	1-249-436-11	CARBON	39K	5%	1/4W	
R855	1-249-417-11	CARBON	1K	5%	1/4W	
R857	1-202-822-00	SOLID	2.2K	20%	1/2W	
R859	1-249-432-11	CARBON	18K	5%	1/4W	
R860	1-247-843-11	CARBON	3.3K	5%	1/4W	
R861	1-249-417-11	CARBON	1K	5%	1/4W	
R862	1-249-383-11	CARBON	1.5	5%	1/4W	F
R863	1-216-475-11	METAL OXIDE	120	5%	3W	F
R865	1-249-436-11	CARBON	39K	5%	1/4W	
R866	1-249-432-11	CARBON	18K	5%	1/4W	
R867	1-216-390-11	METAL OXIDE	1.2	5%	3W	F
R868	1-249-418-11	CARBON	1.2K	5%	1/4W	
R871	1-249-441-11	CARBON	100K	5%	1/4W	
R872	1-247-895-91	CARBON	470K	5%	1/4W	
R873	1-247-887-00	CARBON	220K	5%	1/4W	
R875	1-247-843-11	CARBON	3.3K	5%	1/4W	
R895	1-215-866-11	METAL OXIDE	330	5%	1W	F
R899	1-247-893-11	CARBON	390K	5%	1/4W	
R922	1-249-406-11	CARBON	120	5%	1/4W	
R923	1-249-406-11	CARBON	120	5%	1/4W	
R1598	1-215-922-11	METAL OXIDE	6.8K	5%	3W	F
R1599	1-215-922-11	METAL OXIDE	6.8K	5%	3W	F
R1600	1-215-922-11	METAL OXIDE	6.8K	5%	3W	F
R1601	1-249-437-11	CARBON	47K	5%	1/4W	
R1602	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1603	1-249-441-11	CARBON	100K	5%	1/4W	
R1604	1-249-429-11	CARBON	10K	5%	1/4W	
R1605	1-249-441-11	CARBON	100K	5%	1/4W	
R1606	1-215-469-00	METAL	100K	1%	1/4W	
R1607	1-215-453-00	FILM	22K	1%	1/4W	
R1608	1-249-413-11	CARBON	470	5%	1/4W	
R1609	1-215-485-00	METAL	470K	1%	1/4W	
R1610	1-249-441-11	CARBON	100K	5%	1/4W	F
R1611	1-249-417-11	CARBON	1K	5%	1/4W	
R1612	1-249-427-11	CARBON	6.8K	5%	1/4W	
R1613	1-249-417-11	CARBON	1K	5%	1/4W	
R1614	1-249-441-11	CARBON	100K	5%	1/4W	
R1615	1-249-441-11	CARBON	100K	5%	1/4W	
R1616	1-249-441-11	CARBON	100K	5%	1/4W	
R1617	1-247-903-00	CARBON	1M	5%	1/4W	
R1618	1-215-469-00	FILM	100K	1%	1/4W	
R1619	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1637	1-215-453-00	FILM	22K	1%	1/4W	
R1641	1-247-863-91	CARBON	22K	5%	1/4W	
R1643	1-215-447-00	METAL	12K	10%	1/4W	
R1644	1-249-438-11	CARBON	56K	5%	1/4W	
R1645	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1646	1-249-415-11	CARBON	680	5%	1/4W	
R1647	1-249-414-11	CARBON	560	5%	1/4W	
R1653	1-249-411-11	CARBON	330	5%	1/4W	
R2701	1-247-863-91	CARBON	22K	5%	1/4W	
R2702	1-247-863-91	CARBON	22K	5%	1/4W	

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION	REMARK
R2703	1-247-863-91	CARBON 22K 5% 1/4W	
R2704	1-247-863-91	CARBON 22K 5% 1/4W	
R2705	1-249-429-11	CARBON 10K 5% 1/4W	
R2706	1-249-429-11	CARBON 10K 5% 1/4W	
R2708	1-249-429-11	CARBON 10K 5% 1/4W	
R2719	1-212-857-00	FUSIBLE 10 5% 1/4W	F
		< SWITCH >	
S601 ⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
		< TRANSFORMER >	
T801	1-427-762-11	TRANSFORMER, FERRITE (HDT)	
T803	1-427-776-11	TRANSFORMER, FERRITE (PMT)	
T804	1-429-287-11	HLT	
T805 ⚠	1-453-223-11	TRANSFORMER ASSY, FLYBACK (NX-4123/U2B4)	
T807	1-426-896-11	TRANSFORMER, FERRITE (DFT)	
***			
	*A-1644-076-A	VM BOARD, COMPLETE ******************	
		< CAPACITOR >	
C1701	1-124-119-00	ELECT 330MF 20% 16V	
C1704	1-161-830-00	CERAMIC 0.0047MF 500V	
C1706	1-107-638-11	ELECT 33MF 20% 160V	
C1707	1-124-907-11	ELECT 10MF 20% 50V	
C1708	1-163-075-00	CERAMIC CHIP 0.047MF 50V	
C1709	1-129-702-00	FILM 0.001MF 10% 630V	
C1710	1-136-203-11	FILM 0.01MF 10% 250V	
C1711	1-162-318-11	CERAMIC 0.001MF 10% 500V	
C1712	1-107-667-11	ELECT 2.2MF 20% 160V	
C1713	1-162-318-11	CERAMIC 0.001MF 10% 500V	
C1714	1-136-203-11	FILM 0.01MF 10% 250V	
C1715	1-163-001-11	CERAMIC CHIP 220PF 10% 50V	
C1716	1-124-907-11	ELECT 10MF 20% 50V	
C1718	1-124-120-11	ELECT 220MF 20% 16V	
C1719	1-124-907-11	ELECT 10MF 20% 50V	
C1722	1-101-810-00	CERAMIC 100PF 5% 500V	
C1723	1-104-396-11	ELECT 10MF 20% 16V	
C1724	1-101-810-00	CERAMIC 100PF 5% 500V	
		< CONNECTOR >	
CN1701	1-774-418-11	CONNECTOR, BOARD TO BOARD 8P	
CN1830	*1-564-510-11	PLUG, CONNECTOR 7P	
		< DIODE >	
D1701	8-719-914-43	DIODE DAN202K	
D1702	8-719-914-42	DIODE DA204K	
D1704	8-719-982-37	DIODE MTZJ-39C	
D1705	8-719-982-37	DIODE MTZJ-39C	
D1706	8-719-914-42	DIODE DA204K	
D1708	8-719-914-42	DIODE DA204K	
D1709	8-719-914-42	DIODE DA204K	
		< COIL >	
L1702	1-408-410-00	INDUCTOR 12UH	

REF.NO.	PART NO.	DESCRIPTION	REMARK
		< TRANSISTOR >	
Q1701	8-729-901-59	TRANSISTOR BF199	
Q1702	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1703	8-729-017-05	TRANSISTOR 2SA1837	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; Q1703	
Q1704	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1705	8-729-017-06	TRANSISTOR 2SC4793	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; Q1705	
Q1706	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1707	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1708	8-729-901-59	TRANSISTOR BF199	
Q1710	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1711	8-729-039-27	TRANSISTOR BC546B	
Q1712	8-729-039-25	TRANSISTOR BC556B	
		< RESISTOR >	
JR1701	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR1702	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R1701	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1702	1-249-413-11	CARBON 470 5% 1/4W	
R1703	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1704	1-249-418-11	CARBON 1.2K 5% 1/4W	
R1705	1-247-736-11	CARBON 56 5% 1/2W	F
R1706	1-249-414-11	CARBON 560 5% 1/4W	F
R1707	1-249-411-11	CARBON 330 5% 1/4W	
R1709	1-249-412-11	CARBON 390 5% 1/4W	
R1711	1-249-432-11	CARBON 18K 5% 1/4W	
R1712	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R1713	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R1714	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1715	1-215-866-11	METAL OXIDE 330 5% 1W	F
R1716	1-249-417-11	CARBON 1K 5% 1/4W	F
R1717	1-249-432-11	CARBON 18K 5% 1/4W	
R1718	1-249-412-11	CARBON 390 5% 1/4W	
R1719	1-249-416-11	CARBON 820 5% 1/4W	
R1720	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1721	1-249-414-11	CARBON 560 5% 1/4W	
R1723	1-249-429-11	CARBON 10K 5% 1/4W	
R1724	1-216-689-11	METAL GLAZE 39K 5% 1/10W	
R1725	1-249-413-11	CARBON 470 5% 1/4W	
R1726	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R1727	1-249-402-11	CARBON 56 5% 1/4W	F
R1730	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R1731	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1735	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1736	1-247-807-31	CARBON 100 5% 1/4W	
R1737	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R1738	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R1739	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R1740	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R1741	1-216-166-00	METAL GLAZE 47 5% 1/8W	
R1743	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R1744	1-249-393-11	CARBON 10 5% 1/4W	
R1745	1-249-393-11	CARBON 10 5% 1/4W	

H1 H2 K

*A-1646-122-A H1 BOARD, COMPLETE

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< CAPACITOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
C900	1-101-810-00	CERAMIC 100PF 5% 500V	
C901	1-101-810-00	CERAMIC 100PF 5% 500V	
C902	1-137-372-11	FILM 0.022MF 5% 50V	
C903	1-137-372-11	FILM 0.022MF 5% 50V	

< CONNECTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN948	*1-564-512-11	PLUG, CONNECTOR 9P	
CN950	*1-568-880-51	PIN, CONNECTOR 5P	

< SOCKET >

REF.NO.	PART NO.	DESCRIPTION	REMARK
J900	1-764-606-11	JACK	
J901	1-568-678-11	TERMINAL BLOCK, S 3P	

< COIL >

REF.NO.	PART NO.	DESCRIPTION	REMARK
L901	1-408-409-00	INDUCTOR 10UH	
L902	1-408-409-00	INDUCTOR 10UH	

< RESISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
L902	1-249-417-11	CARBON 1K 5% 1/4W	
L903	1-249-417-11	CARBON 1K 5% 1/4W	
R905	1-247-804-11	CARBON 75 5% 1/4W	
R906	1-247-804-11	CARBON 75 5% 1/4W	
R909	1-249-437-11	CARBON 47K 5% 1/4W	
R910	1-249-437-11	CARBON 47K 5% 1/4W	
R911	1-249-425-11	CARBON 4.7K 5% 1/4W	
R912	1-249-421-11	CARBON 2.2K 5% 1/4W	
R913	1-249-425-11	CARBON 4.7K 5% 1/4W	
R914	1-249-421-11	CARBON 2.2K 5% 1/4W	
R925	1-249-429-11	CARBON 10K 5% 1/4W	
R926	1-249-429-11	CARBON 10K 5% 1/4W	

< SWITCH >

REF.NO.	PART NO.	DESCRIPTION	REMARK
S900	1-692-979-11	SWITCH, TACTILE	
S901	1-692-979-11	SWITCH, TACTILE	
S902	1-692-979-11	SWITCH, TACTILE	

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*A-1646-123-A H2 BOARD, COMPLETE

****

< CAPACITOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
C905	1-126-964-11	ELECT 10MF 20% 50V	

< CONNECTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN949	*1-568-879-11	PIN, CONNECTOR 4P	

< DIODE >

REF.NO.	PART NO.	DESCRIPTION	REMARK
D901	8-719-030-11	DIODE SLA-570KT3F	
	*4-203-258-01	HOLDER, LED ; D901	

< IC >

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC900	8-742-014-00	RECEIVER HIC SBX1981-51	

< RESISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
R900	1-247-815-91	CARBON 220 5% 1/4W	
R908	1-249-401-11	CARBON 47 5% 1/4W	

****

*A-1649-016-A K BOARD, COMPLETE

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< CAPACITOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
C1252	1-126-967-11	ELECT 47MF 20% 16V	
C1253	1-126-967-11	ELECT 47MF 20% 16V	
C1254	1-136-165-00	FILM 0.1MF 5% 50V	
C1255	1-136-165-00	FILM 0.1MF 5% 50V	
C1256	1-126-953-11	ELECT 2200MF 20% 35V	
C1257	1-136-165-00	FILM 0.1MF 5% 50V	
C1258	1-126-953-11	ELECT 2200MF 20% 35V	
C1259	1-136-165-00	FILM 0.1MF 5% 50V	

< CONNECTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN0271	*1-564-508-11	PLUG, CONNECTOR 5P	
CN0272	*1-564-509-11	PLUG, CONNECTOR 6P	
CN0273	*1-564-508-11	PLUG, CONNECTOR 5P	
CN0274	1-508-784-12	PIN, CONNECTOR (5MM PITCH) 1P	

< DIODE >

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1250	8-719-991-33	DIODE 1SS133T-77	
D1251	8-719-991-33	DIODE 1SS133T-77	
D1252	8-719-991-33	DIODE 1SS133T-77	
D1253	8-719-991-33	DIODE 1SS133T-77	

< IC >

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1250	8-759-190-89	IC TDA7265	
	4-202-373-01	SPRING, IC ; IC1250	
	4-202-710-01	SPACER, INSULATING ; IC1250	

< RESISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
R1250	1-249-424-11	CARBON 3.9K 5% 1/4W	
R1251	1-249-424-11	CARBON 3.9K 5% 1/4W	
R1253	1-249-417-11	CARBON 1K 5% 1/4W	
R1256	1-249-417-11	CARBON 1K 5% 1/4W	
R1258	1-249-413-11	CARBON 470 5% 1/4W	
R1259	1-249-430-11	CARBON 12K 5% 1/4W	
R1260	1-249-430-11	CARBON 12K 5% 1/4W	
R1261	1-249-413-11	CARBON 470 5% 1/4W	
R1262	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1263	1-216-357-00	METAL OXIDE 4.7 5% 1W	F
R1264	1-216-357-00	METAL OXIDE 4.7 5% 1W	F
R1265	1-249-426-11	CARBON 5.6K 5% 1/4W	
R1266	1-249-426-11	CARBON 5.6K 5% 1/4W	
R1267	1-249-429-11	CARBON 10K 5% 1/4W	
R1268	1-249-429-11	CARBON 10K 5% 1/4W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1651-085-A	J1 BOARD, COMPLETE ******************	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
	*A-1651-090-A	J1 BOARD, COMPLETE ******************	(KV-32WS4B)
		< CAPACITOR >	
C551	1-101-005-00	CERAMIC 0.022MF 50V	
C554	1-101-005-00	CERAMIC 0.022MF 50V	
C560	1-101-005-00	CERAMIC 0.022MF 50V	
C563	1-101-005-00	CERAMIC 0.022MF 50V	
C567	1-102-119-00	CERAMIC 0.0015MF 10% 50V	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
C568	1-102-119-00	CERAMIC 0.0015MF 10% 50V	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
		< CONNECTOR >	
CN550	*1-564-519-11	PLUG, CONNECTOR 4P	
CN551	*1-564-519-11	PLUG, CONNECTOR 4P	
CN552	1-564-524-11	PLUG, CONNECTOR 9P	
CN553	*1-564-520-11	PLUG, CONNECTOR 5P	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
CN572	*1-564-521-11	PLUG, CONNECTOR 6P	
		< DIODE >	
D550	8-719-923-60	DIODE MTZJ-T-77-9.1A	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
D551	8-719-923-60	DIODE MTZJ-T-77-9.1A	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
D552	8-719-923-60	DIODE MTZJ-T-77-9.1A	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
		< SOCKET >	
J550	1-537-339-11	TERMINAL BOARD	
J551	1-537-978-11	TERMINAL BOARD	
J552	1-695-817-11	JACK BLOCK, PIN 3P	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
J553	1-569-578-11	TERMINAL, S (WITH SW)	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
		< COIL >	
L550	1-402-711-11	INDUCTOR, WIDE BAND	
L552	1-402-711-11	INDUCTOR, WIDE BAND	
L554	1-402-711-11	INDUCTOR, WIDE BAND	
L556	1-402-711-11	INDUCTOR, WIDE BAND	
		< RESISTOR >	
R551	1-249-426-11	CARBON 5.6K 5% 1/4W	
R552	1-249-426-11	CARBON 5.6K 5% 1/4W	
R553	1-249-393-11	CARBON 10 5% 1/4W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R554	1-249-394-11	CARBON 12 5% 1/4W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R555	1-249-394-11	CARBON 12 5% 1/4W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R556	1-247-895-91	CARBON 470K 5% 1/4W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R557	1-247-895-91	CARBON 470K 5% 1/4W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R558	1-249-412-11	CARBON 390 5% 1/4W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R559	1-249-412-11	CARBON 390 5% 1/4W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R560	1-249-412-11	CARBON 390 5% 1/4W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R561	1-249-412-11	CARBON 390 5% 1/4W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
**			
	*A-1652-043-A	T BOARD, COMPLETE *****************	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R)
	*A-1652-045-A	T BOARD, COMPLETE *****************	(KV-32WS4B)
	*A-1652-046-A	T BOARD, COMPLETE *****************	(KV-32WS4U)
		< CAPACITOR >	
C5002	1-165-319-11	CERAMIC CHIP 0.1MF 50V	
C5003	1-124-120-11	ELECT 220MF 20% 16V	
C5004	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	(KV-32WS4B)
C5005	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	(KV-32WS4B)
C5006	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	(KV-32WS4B)
C5007	1-163-275-11	CERAMIC CHIP 0.001MF 5% 50V	
C5008	1-163-037-11	CERAMIC CHIP 0.022MF 10% 50V	
C5009	1-126-965-11	ELECT 22MF 20% 50V	
C5010	1-124-907-11	ELECT 10MF 20% 50V	
C5011	1-126-961-11	ELECT 2.2MF 20% 50V	
C5012	1-109-953-11	ELECT 2.2MF 20% 50V	(KV-32WS4B)
C5013	1-163-023-00	CERAMIC CHIP 0.015MF 10% 50V	
C5014	1-109-953-11	ELECT 2.2MF 20% 50V	
C5015	1-165-319-11	CERAMIC CHIP 0.1MF 50V	
C5016	1-124-120-11	ELECT 220MF 20% 16V	
C5018	1-163-237-11	CERAMIC CHIP 27PF 5% 50V	(KV-32WS4B)
C5019	1-104-664-11	ELECT 47MF 20% 25V	
		< FILTER >	
CF5001	1-760-106-11	FILTER, CERAMIC	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)

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REF.NO.	PART NO.	DESCRIPTION	REMARK
CF5002	1-567-100-00	FILTER, CERAMIC	(KV-32WS4B/32WS4U)
CF5003	1-760-450-21	FILTER, CERAMIC	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
		< CONNECTOR >	
CN5001	*1-564-508-11	PLUG, CONNECTOR 5P	
CN5002	*1-564-509-11	PLUG, CONNECTOR 6P	
		< DIODE >	
D5002	8-719-421-57	DIODE MA73-TX	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
D5003	8-719-421-57	DIODE MA73-TX	(KV-32WS4B/32WS4U)
D5004	8-719-421-57	DIODE MA73-TX	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
		< IC >	
IC5001	8-759-398-24	IC U2860B-BFPG3	
IC5002	8-752-072-94	IC CXA1875AM-T4	
		< COIL >	
L5001	1-408-406-00	INDUCTOR 5.6UH	
L5002	1-408-406-00	INDUCTOR 5.6UH	
L5003	1-412-751-11	INDUCTOR 18UH	(KV-32WS4B)
		< TRANSISTOR >	
Q5001	8-729-920-74	TRANSISTOR 2SC2412K-QR	(KV-32WS4B)
Q5002	8-729-039-67	TRANSISTOR BSS83	(KV-32WS4B)
Q5004	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q5005	8-729-901-01	TRANSISTOR DTC144EK	(KV-32WS4B)
Q5006	8-729-901-01	TRANSISTOR DTC144EK	(KV-32WS4B)
Q5007	8-729-920-74	TRANSISTOR 2SC2412K-QR	(KV-32WS4B)
Q5008	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q5009	8-729-901-01	TRANSISTOR DTC144EK	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
Q5010	8-729-901-01	TRANSISTOR DTC144EK	(KV-32WS4B)
Q5011	8-729-901-01	TRANSISTOR DTC144EK	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
Q5012	8-729-901-01	TRANSISTOR DTC144EK	(KV-32WS4B)
Q5014	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q5015	8-729-216-22	TRANSISTOR 2SA1162-G	(KV-32WS4B)
Q5016	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q5017	8-729-216-22	TRANSISTOR 2SA1162-G	
		< RESISTOR >	
R5001	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R5002	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R5004	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R5005	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R5007	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-32WS4B)
R5008	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-32WS4B)
R5009	1-208-774-11	METAL CHIP 470 0.50% 1/10W	(KV-32WS4B)
R5010	1-208-774-11	METAL CHIP 470 0.50% 1/10W	(KV-32WS4B)
R5011	1-208-774-11	METAL CHIP 470 0.50% 1/10W	(KV-32WS4B)
R5012	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-32WS4B)
R5015	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R/32WS4U)
R5016	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R5017	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R5018	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R5020	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R5021	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R5022	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R5023	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(KV-32WS4B)
R5024	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(KV-32WS4B)
R5025	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(KV-32WS4B)
R5026	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R5027	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R5028	1-216-039-00	METAL GLAZE 390 5% 1/10W	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
R5029	1-216-039-00	METAL GLAZE 390 5% 1/10W	(KV-32WS4B/32WS4U)
R5030	1-216-039-00	METAL GLAZE 390 5% 1/10W	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
R5031	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
R5032	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	(KV-32WS4B)
R5033	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
R5034	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R5035	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R5036	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R5037	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R5041	1-216-081-00	METAL GLAZE 22K 5% 1/10W	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
R5042	1-216-081-00	METAL GLAZE 22K 5% 1/10W	(KV-32WS4B)
R5043	1-216-081-00	METAL GLAZE 22K 5% 1/10W	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
R5044	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R5045	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
R5046	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-32WS4B)
R5047	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
R5048	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-32WS4B)
R5052	1-216-041-00	METAL GLAZE 470 5% 1/10W	

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION	REMARK
R5053	1-216-041-00	METAL GLAZE 470 5%	1/10W
R5054	1-216-041-00	METAL GLAZE 470 5%	1/10W
R5055	1-216-025-91	METAL GLAZE 100 5%	1/10W
R5056	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W (KV-32WS4B)
R5057	1-216-025-91	METAL GLAZE 100 5%	1/10W (KV-32WS4B)
R5058	1-216-033-00	METAL GLAZE 220 5%	1/10W
R5059	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R5060	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R5061	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R5062	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R5063	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
		< TUNER >	
TU5001	1-693-338-21	TUNER (TUVIF) (AEP) (KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R)	
	1-693-340-21	TUNER (TUVIF) (FR) (KV-32WS4B)	
	1-693-339-21	TUNER (TUVIF) (UK) (KV-32WS4U)	

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MISCELLANEOUS
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REF.NO.	PART NO.	DESCRIPTION	REMARK
	⚠ 1-251-317-31	CAP ASSY, HIGH-VOLTAGE	
	⚠ 1-411-871-11	COIL, DEGAUSSING	
	1-452-032-00	MAGNET, DISK; 10MM Ø	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
	1-452-724-22	COIL, NA ROTATION (RT-165)	
	⚠ 1-453-223-11	TRANSFORMER ASSY, FLYBACK	(NX-4123/U2B4)
	1-504-418-21	SPEAKER (5CM)	
	1-505-154-11	SPEAKER (6.5CM)	
	1-505-155-11	SPEAKER (10CM)	
	⚠ 1-571-433-21	SWITCH, PUSH (AC POWER)	
	1-693-338-21	TUNER (TUVIF) (AEP) (KV-32WS4A/32WS4D/32WS4E/32WS4K/32WS4R)	
	1-693-340-21	TUNER (TUVIF) (FR) (KV-32WS4B)	
	1-693-339-21	TUNER (TUVIF) (UK) (KV-32WS4U)	
	⚠ 1-751-680-11	CORD, POWER (WITH NOISE FILTER) 2.5A/250V	(KV-32WS4A/32WS4B/32WS4D/32WS4E/32WS4K/32WS4R)
	⚠ 1-767-204-11	CORD, POWER (FILTER) 3A/250V	(KV-32WS4U)
	⚠ 8-451-485-11	DEFLECTION YOKE (Y32C2C2-M)	
	⚠ 8-453-011-11	NECK ASSY, (NA299-M)	
V901	⚠ 8-735-032-05	PICTURE TUBE (SD-297)(W76LHT010X)	

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ACCESSORIES AND PACKING MATERIALS
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REF.NO.	PART NO.	DESCRIPTION	REMARK
	1-765-654-11	CABLE, SPEAKER	
	*4-046-772-01	BAG, PROTECTION	
	*4-050-160-01	CUSHION (UPPER) (ASSY)	
	*4-050-163-11	CUSHION (LOWER) (ASSY)	
	*4-050-158-01	INDIVIDUAL CARTON	
	*4-203-159-01	TRAY (A)	
	*4-203-166-01	CUSHION (REAR)	
	*4-203-186-01	WOODEN PALETT	
	4-203-585-41	MANUAL, INSTRUCTION (KV-32WS4A) (ITALIAN)	
	4-203-585-51	MANUAL, INSTRUCTION (KV-32WS4B)	(FRENCH)
	4-203-585-11	MANUAL, INSTRUCTION (KV-32WS4D) (GERMAN/ENGLISH/DUTCH/FRENCH/ITALIAN/GREEK/TURKISH)	
	4-203-585-71	MANUAL, INSTRUCTION (KV-32WS4E) (PORTUGUESE/DANISH/SWEDISH/NORWEGIAN/FINNISH/SPANISH/FRENCH/DUTCH/GERMAN)	
	4-203-585-91	MANUAL, INSTRUCTION (KV-32WS4K/32WS4R) (XXXXX)	
	4-203-585-61	MANUAL, INSTRUCTION (KV-32WS4U)	(ENGLISH)
	*4-396-077-01	JOINT	

REMOTE COMMANDER
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REF.NO.	PART NO.	DESCRIPTION	REMARK
	1-473-692-11	COMMANDER, STANDARD TYPE (RM-862)	

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SONY®

SERVICE MANUAL AE-4 CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.	MODEL	COMMANDER	DEST	CHASSIS NO.
KV-32WS4A	RM-862	Italian	SCC-K43B-A	KV-32WS4K	RM-862	OIRT	SCC-K44C-A
KV-32WS4B	RM-862	French	SCC-K45B-A	KV-32WS4R	RM-862	OIRT	SCC-K44D-A
KV-32WS4D	RM-862	AEP	SCC-K41B-A	KV-32WS4U	RM-862	UK	SCC-K46A-A
KV-32WS4E	RM-862	Spanish	SCC-K42B-A				

SUPPLEMENT - 1

SUBJECT : DELETION OF UK VERSION

File this supplement with the service manual

INTRODUCTION : This supplement is required to reflect the changes brought about by the addition of Q1 board, deletion of UK version, Russian text and macrovision colour flicker in PAP mode.

SECTION 5 DIAGRAMS

(T Board, Page 53) ....See page 2
(G Board, Page 101) ....See page 3
(A Board, Page 47) ....See page 11
(Q Board, Page 69) ....See page 17
(B Board, Page 77) ....See page 20
(Q1 Board, New) ....See page 24
(D Board, Page 97) ....See page 26
(VM Board, Page 91) ....See page 32
(C Board, Page 85) ....See page 33
(K Board, Page 88) ....See page 34

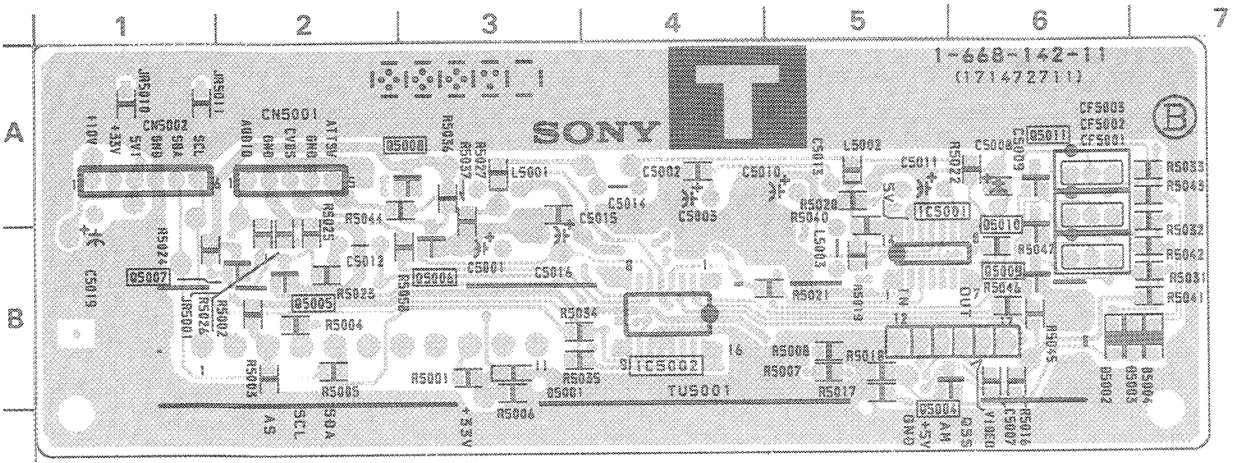
SECTION 6 EXPLODED VIEWS

6-1.CHASSIS (Page111)....................See page 35
6-2.PICTURE TUBE (Page112).........See page 36

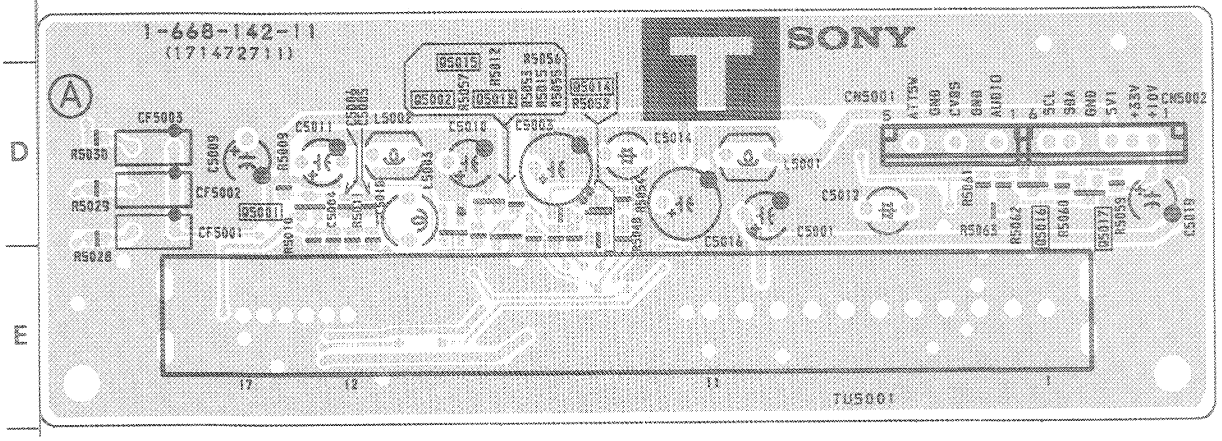
SECTION 7 ELECTRICAL PARTS LIST (Page 113)......See page 37

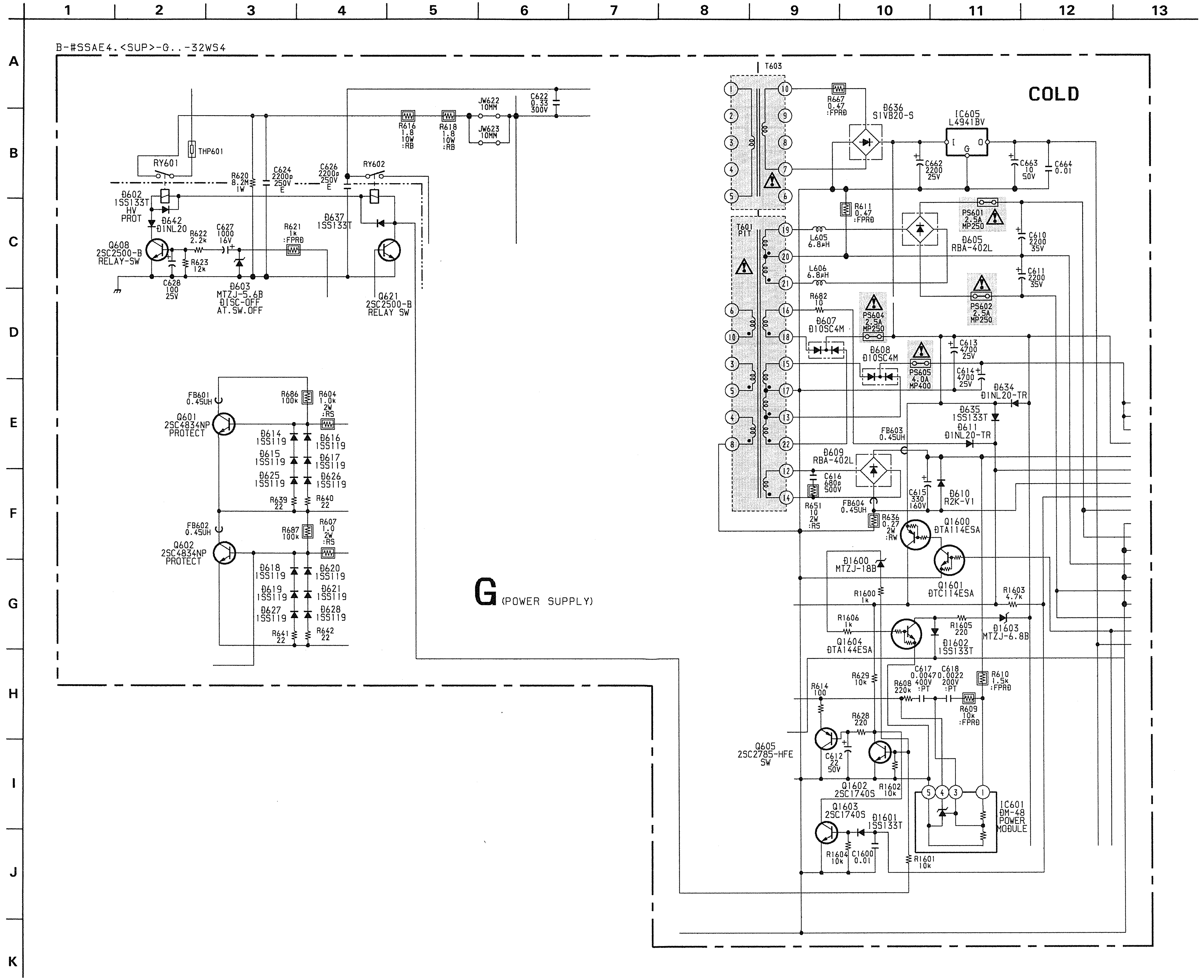
T [SUB TUNER]

T Board < Conductor Side >


1
2
3
4
5
6
7
A
B
1-668-142-11
(171472711)
SONY
T
CN5001
CN5002
+10V
+33V
5V1
GND
SDA
SCL
AUDIO
CVBS
ATTSW
JR5010
JR5011
C5019
Q5007
Q5008
Q5005
Q5006
L5001
L5002
L5003
C5002
C5003
C5010
C5011
C5014
C5015
C5016
C5001
IC5001
IC5002
Q5009
Q5010
Q5011
Q5004
CF5001
CF5002
CF5003
TU5001
AS
+33V
AM
+5V
QSS
VIDEO
OUT
B

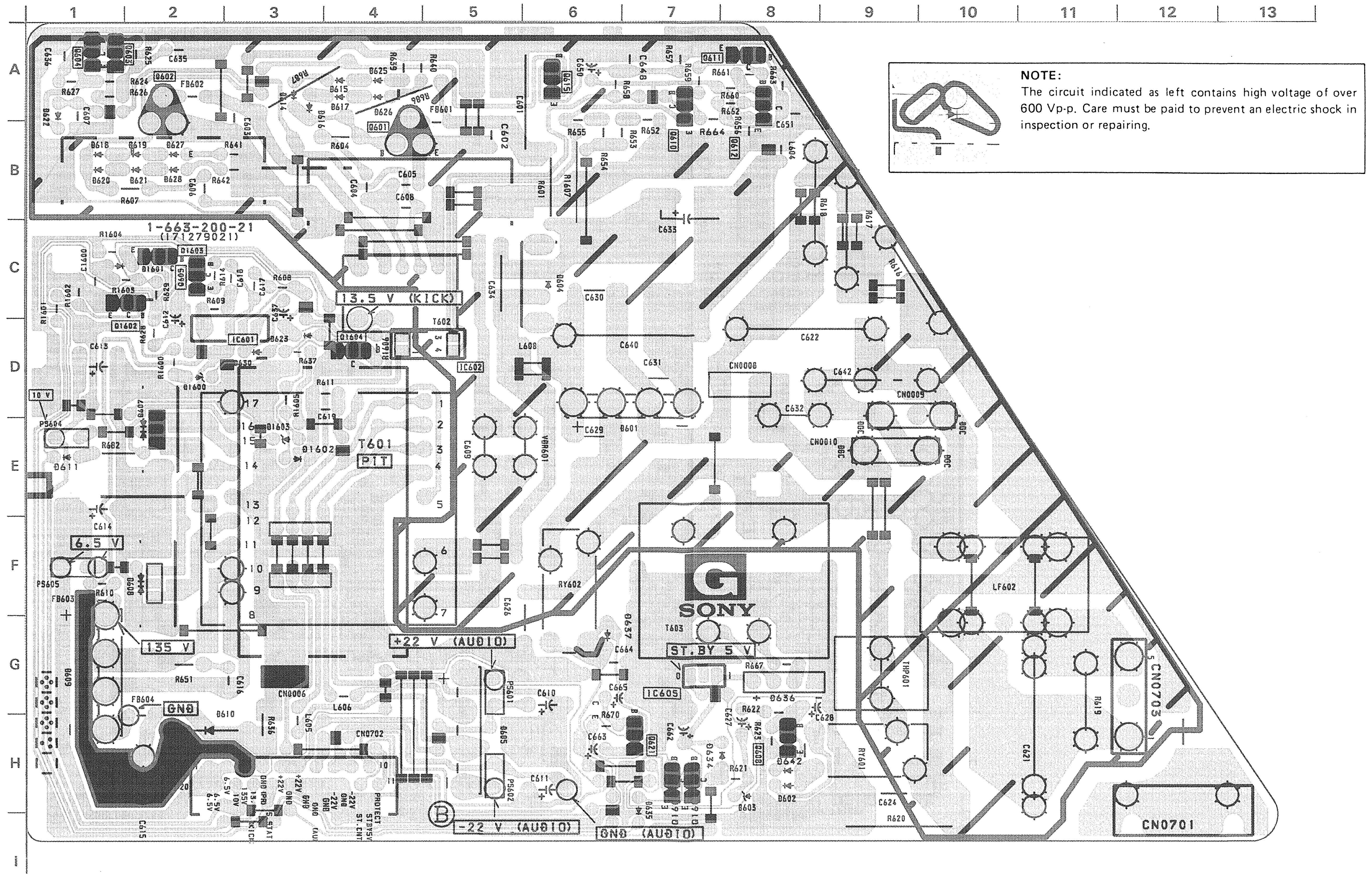
T Board < Component Side >


D
E
1-668-142-11
(171472711)
SONY
T
A
CF5003
CF5002
CF5001
R5030
R5029
R5028
C5009
R5009
C5011
L5002
C5010
C5003
C5014
L5001
C5012
C5016
C5001
C5018
Q5001
Q5002
Q5012
Q5013
Q5014
Q5015
Q5016
Q5017
R5052
R5056
CN5001
CN5002
ATTSW
GND
CVBS
AUDIO
SCL
SDA
5V1
+33V
+10V
TU5001
17
12
11
1


B-#SSAE4.<SUP>-G..-32WS4
COLD
G (POWER SUPPLY)
T603
T601 PIT
IC605 L4941BV
IC601 DM-48 POWER MODULE
RY601
RY602
THP601
Q608 2SC2500-B RELAY-SW
Q621 2SC2500-B RELAY SW
Q601 2SC4834NP PROTECT
Q602 2SC4834NP PROTECT
Q605 2SC2785-HFE SW
Q1600 DTA114ESA
Q1601 DTC114ESA
Q1602 2SC1740S
Q1603 2SC1740S
Q1604 DTA144ESA
D605 RBA-402L
D609 RBA-402L
D636 S1VB20-5

G [POWER SUPPLY]

G Board

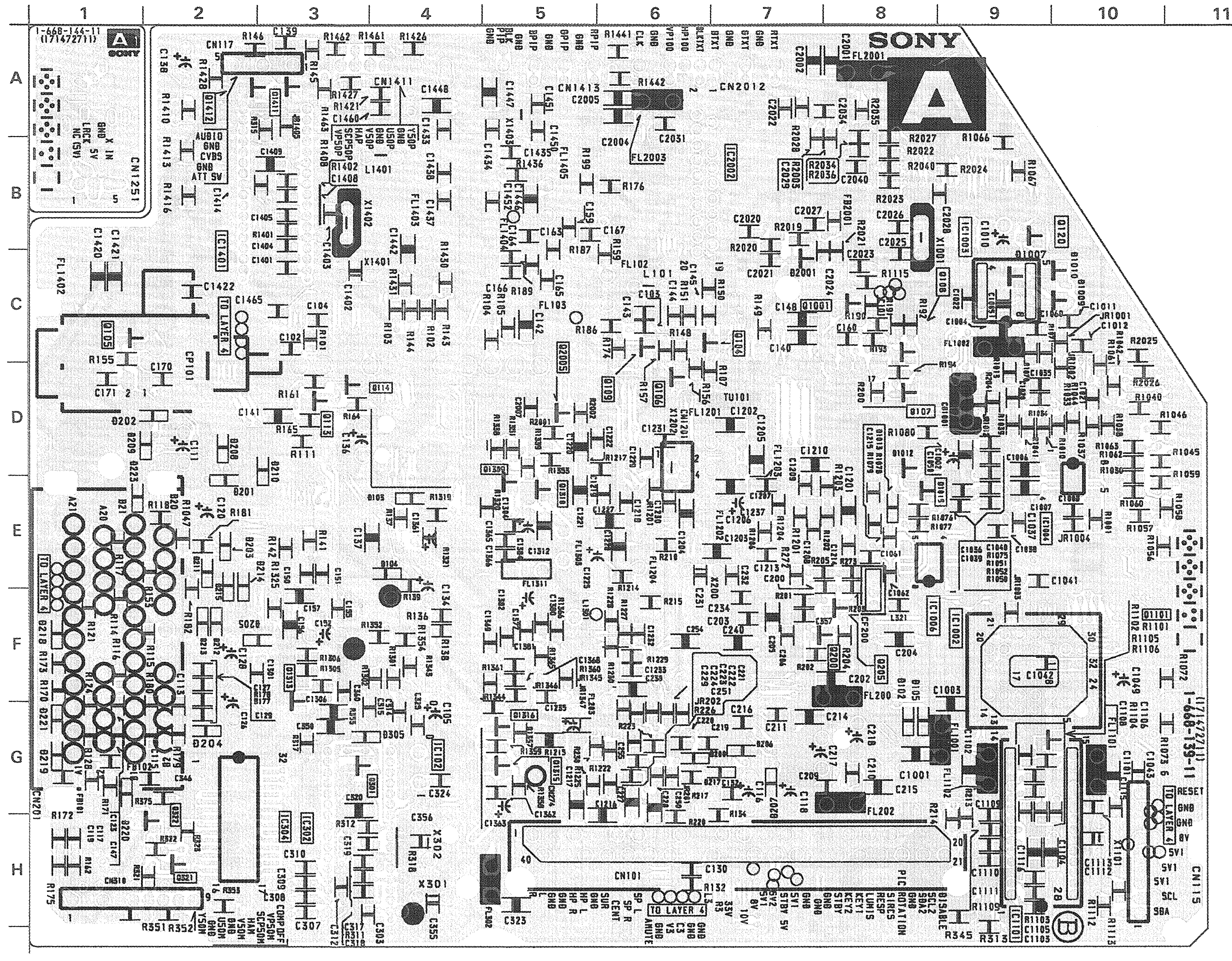

1-663-200-21
13.5 V (KICK)
10 V
6.5 V
135 V
+22 V (AUDIO)
-22 V (AUDIO)
GND (AUDIO)
GND
ST.BY 5 V
T601 PIT
IC605
IC601
IC602
LF602
CN0701
CN0703
SONY

NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

A

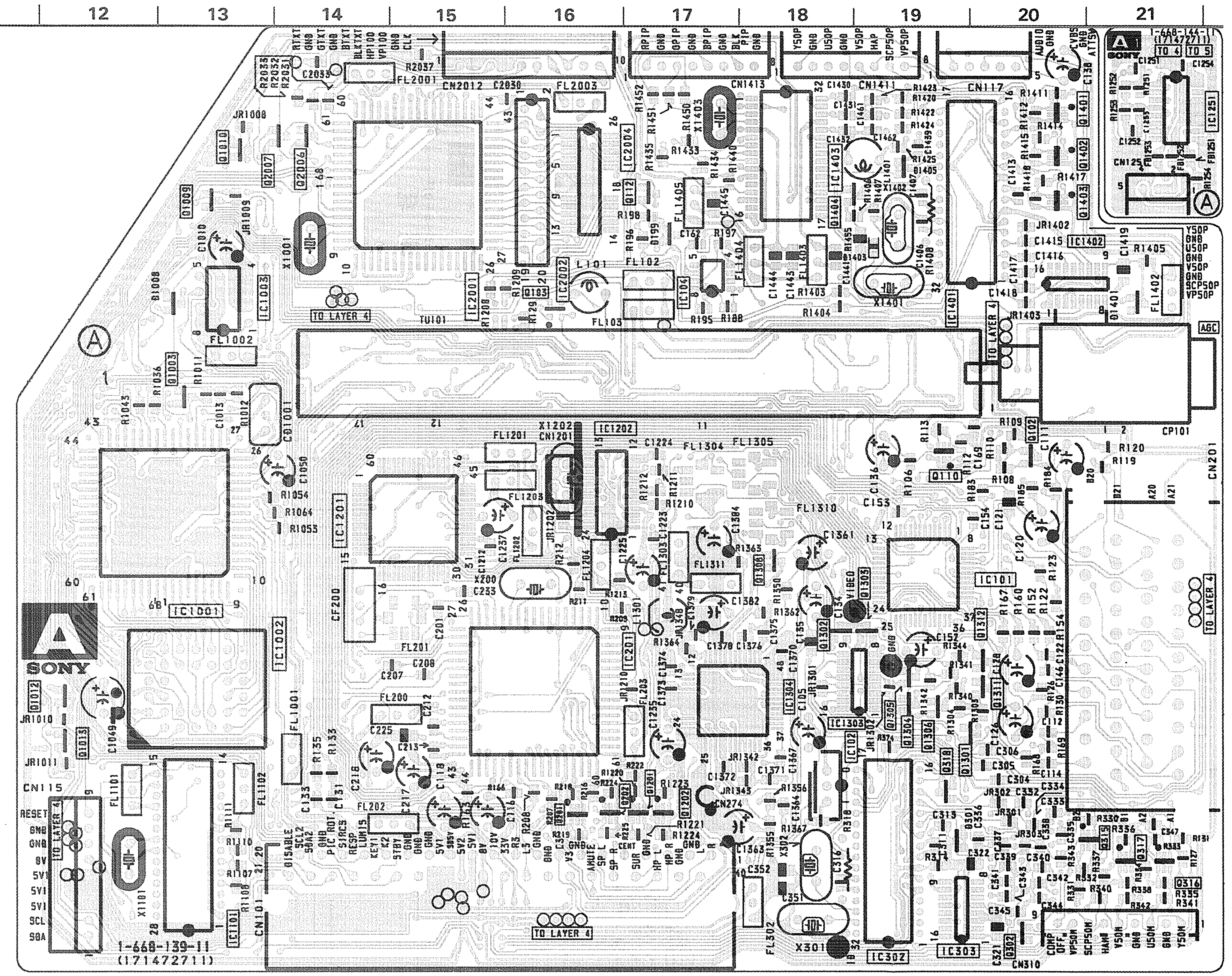
AV INPUT/OUTPUT INTERFACE, DIGITAL COMB FILTER, COLOR DECODER SOUND PROCESSOR, DOLBY NOISE REDUCTION, MICRO CONTROLLER, MEGA TEXT

A Board < Conductor Side >

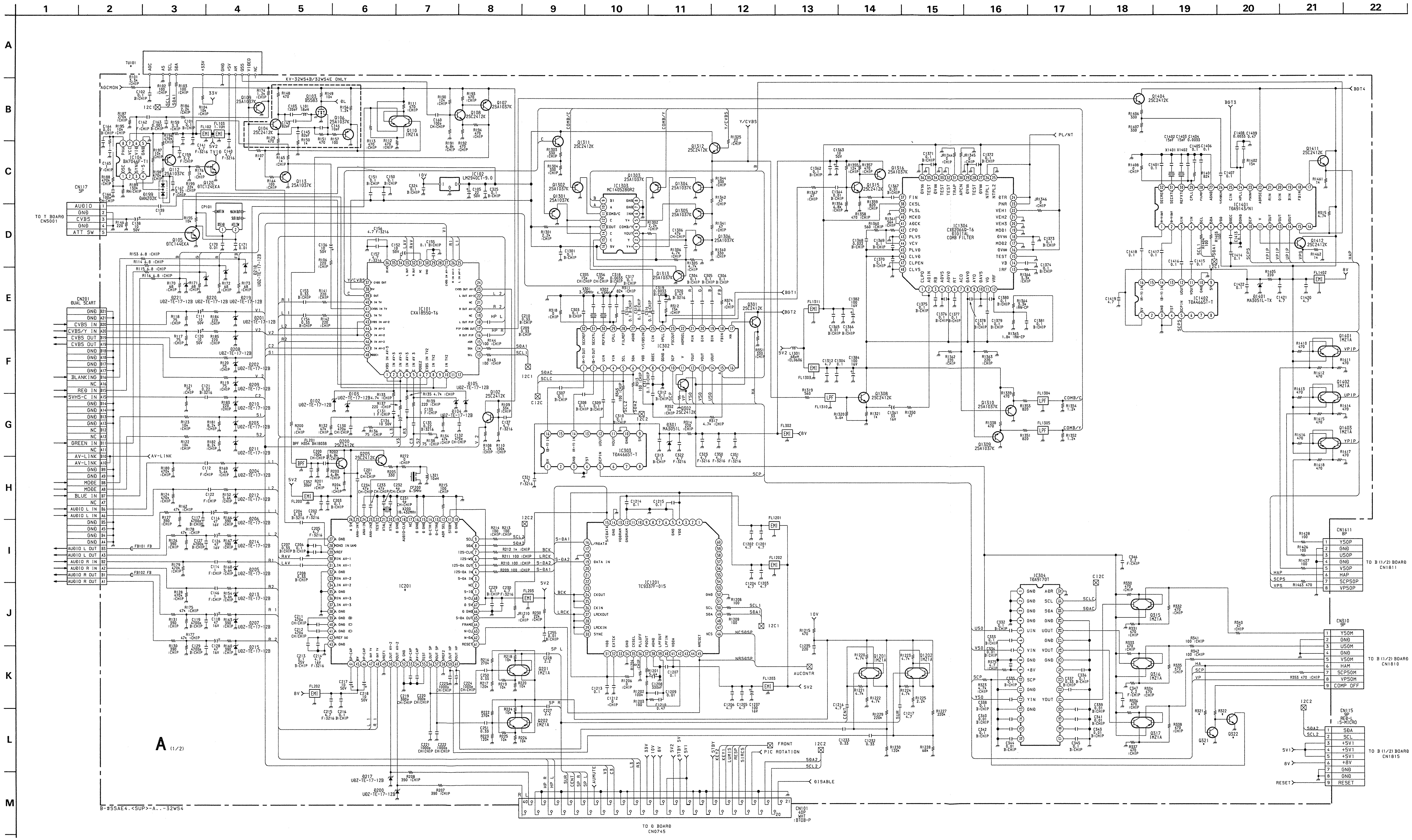


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
SONY
A
1-668-144-11
(171472711)
CN1251
CN117
CN1413
CN1411
CN2012
CN101
CN115
CN201
CN310
TU101
X1401
X1402
X301
X200
TO LAYER 4
1-668-139-11
(171472711)
RESET
GND
5V1
SCL
SDA
B

A Board < Component Side >



11
12
13
14
15
16
17
18
19
20
21
SONY
A
1-668-139-11
(171472711)
1-668-144-11
(171472711)
CN2012
CN1413
CN1411
CN117
CN115
CN101
CN201
CN310
CP101
TU101
IC1001
IC1002
IC1201
IC1202
IC101
IC302
IC303
X1101
X1201
X301
TO LAYER 4
RESET
GND
5V1
SCL
SDA


1
2
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7
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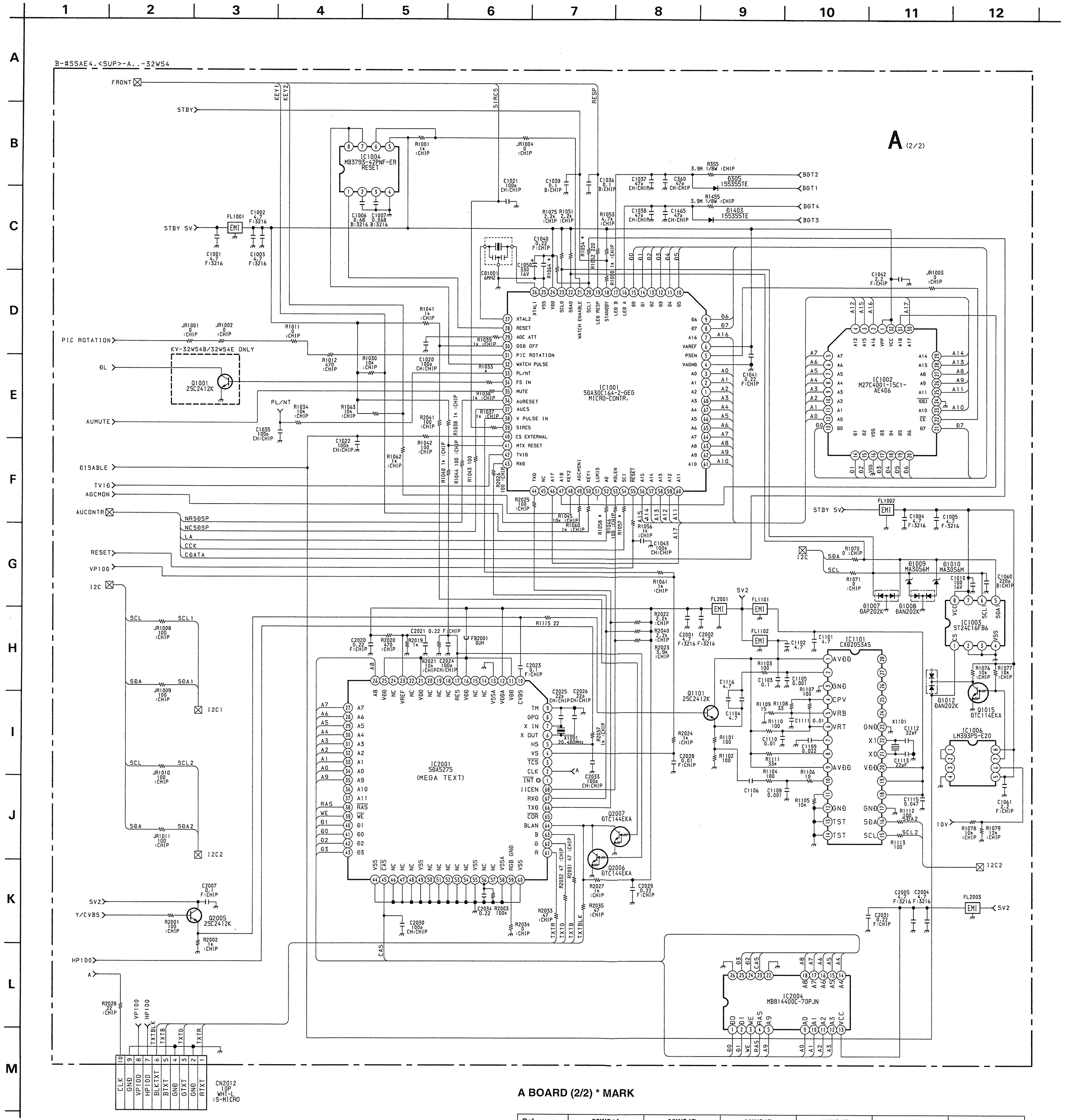
9
10
11
12
13
14
15
16
17
18
19
20
21
22
A
B
C
D
E
F
G
H
I
J
K
L
M
TU101
KY-32WS4B/32WS4E ONLY
AGCMON
CN117 5P
TO T BOARD CN5001
AUDIO
GND
CVBS
GND
ATT SW
CN201 DUAL SCART
CVBS IN
CVBS/Y IN
CVBS OUT
BLANKING
RED IN
SVHS-C IN
GREEN IN
AV-LINK
MODE
BLUE IN
AUDIO L IN
AUDIO L OUT
AUDIO R IN
AUDIO R OUT
IC104 BA7046F-T1
IC102 LM2940CT-9.0
IC101 CXA1855Q-T6
IC201
IC1303 MC14052BR2
IC302
IC303 TDA4665T-T
IC1304 CXD2064Q-T6 (DIGITAL) COMB FILTER
IC1401 TDA9143/N1
IC1402 TDA4665T-T
IC1201 TC9337F-015
IC304 TDA9170T
CN1411 8P
YSOP
GND
USOP
GND
VSOP
HAP
SCPSOP
VPSOP
TO B (1/2) BOARD CN1811
CN310 9P
YSOM
GND
USOM
GND
VSOM
HAM
SCPSOM
VPSOM
COMP OFF
TO B (1/2) BOARD CN1810
CN115 5P RED-L (S-MICRO)
SDA
SCL
+5V1
+5V1
+8V
GND
GND
RESET
TO B (1/2) BOARD CN1815
CN101 40P WHT (BTOB-P)
TO G BOARD CN0745
PL/NT
BOT4
BOT3
COMB/C
COMB/Y
Y/CVBS
FRONT
PIC ROTATION
DISABLE
AUCONTR
A (1/2)
B-#SSAE4.<SUP>-A..-32WS4

A BOARD (1/2) * MARK

Ref	32WS4A	32WS4B	32WS4D	32WS4E	32WS4K	32WS4R
Q321	2SC3052-EF	-	2SC3052-EF	2SC3052-EF	2SC3052-EF	2SC3052-EF
Q322	2SC3052-EF	-	2SC3052-EF	2SC3052-EF	2SC3052-EF	2SC3052-EF
R321	10K	-	10K	10K	10K	10K
R322	10K	-	10K	10K	10K	10K


A (2/2)
B-#SSAE4.<SUP>-A..-32WS4
IC1001 SDA30C164-2-OEG MICRO-CONTR.
IC1002 M27C4001-15C1-AE406
IC1004 MB3793-42PNF-ER RESET
IC1003 ST24C16FB6
IC1006 LM393PS-E20
IC1101 CXD2053AS
IC2001 SDA5275 (MEGA TEXT)
IC2004 MB814400C-70PJN
CN2012 10P WHT-L :S-MICRO
KV-32WS4B/32WS4E ONLY

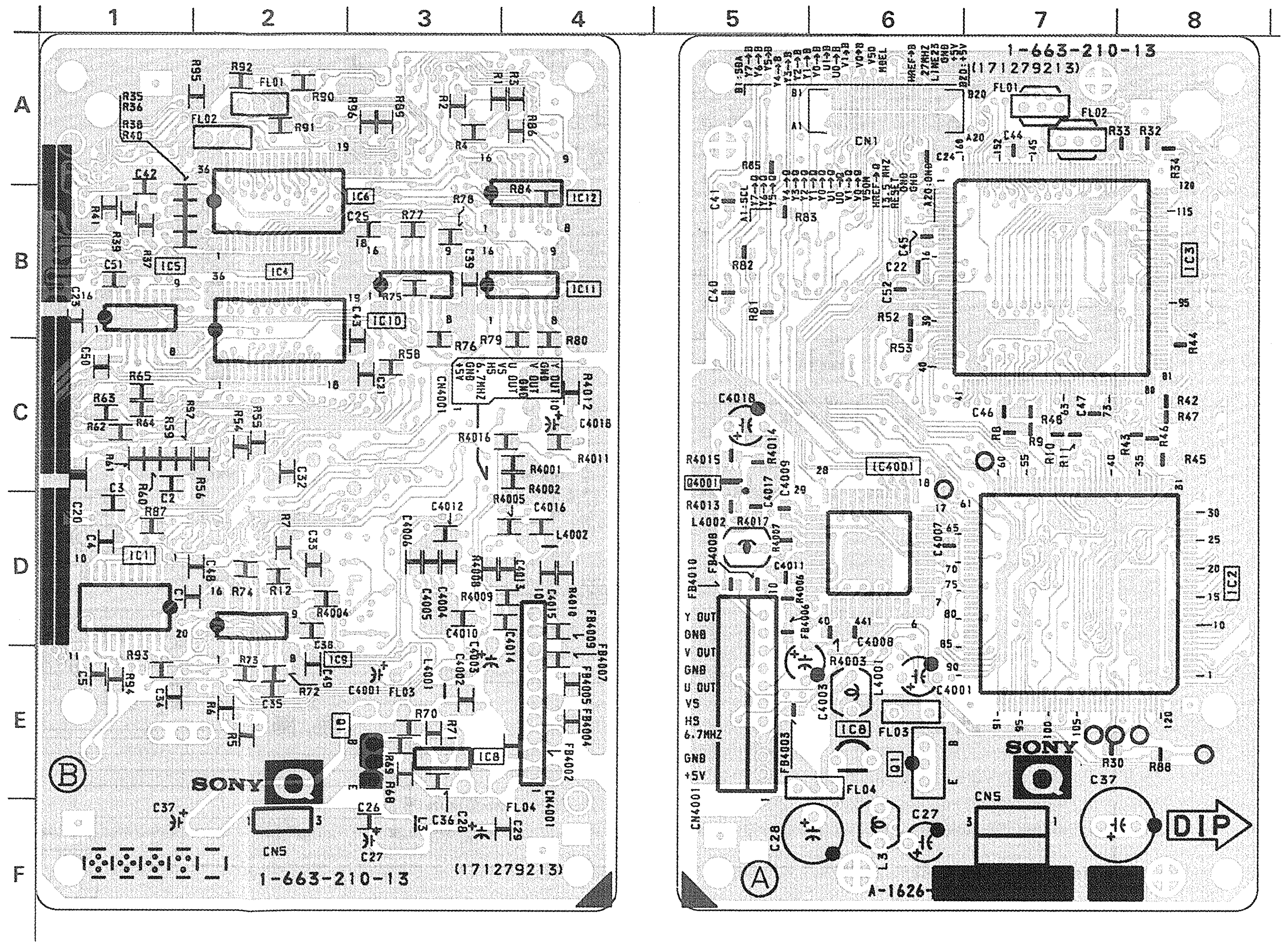
A BOARD (2/2) * MARK

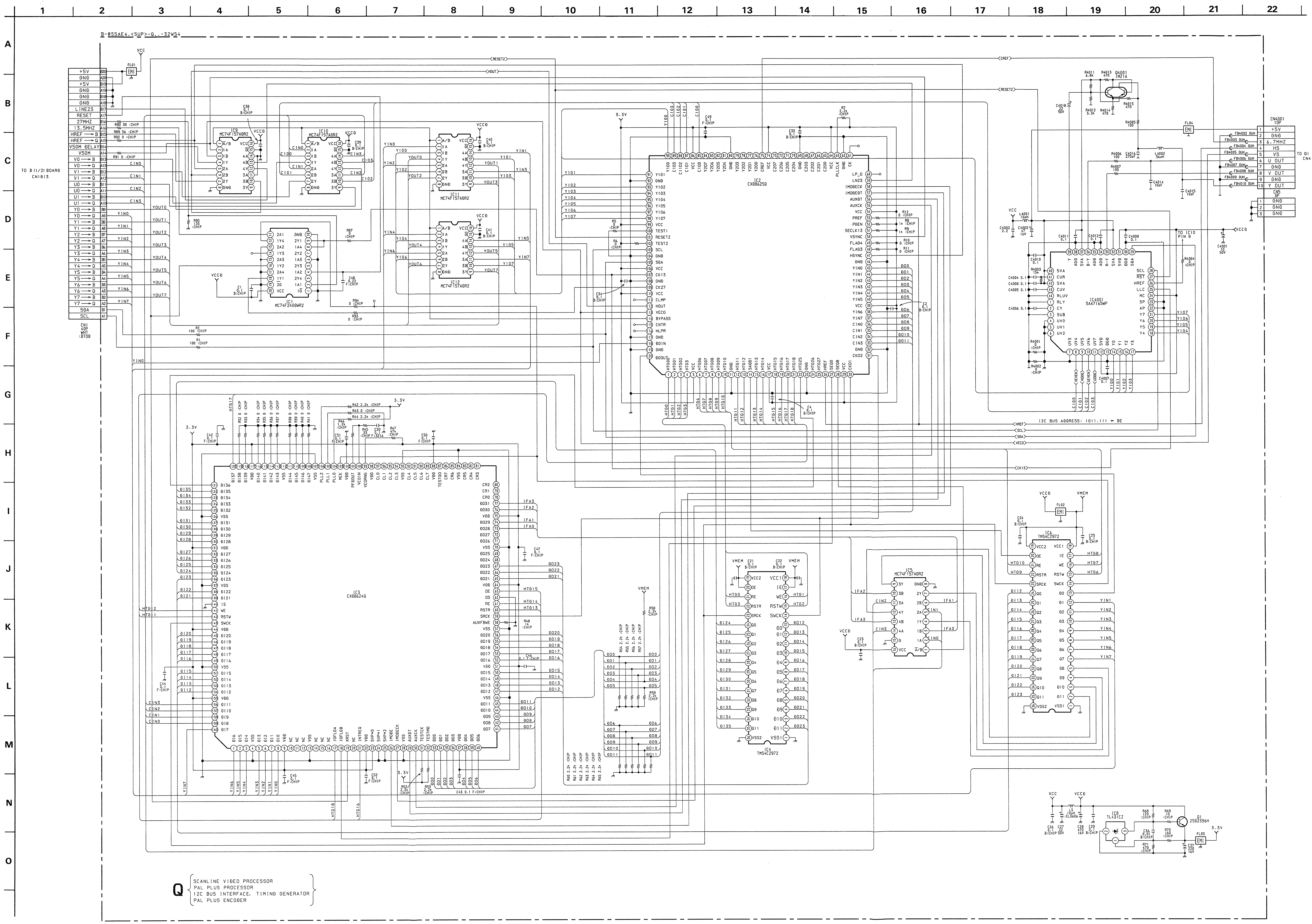
Ref	32WS4A	32WS4B	32WS4D	32WS4E	32WS4K	32WS4R
R1064	-	2.2K	-	2.2K	2.2K	-

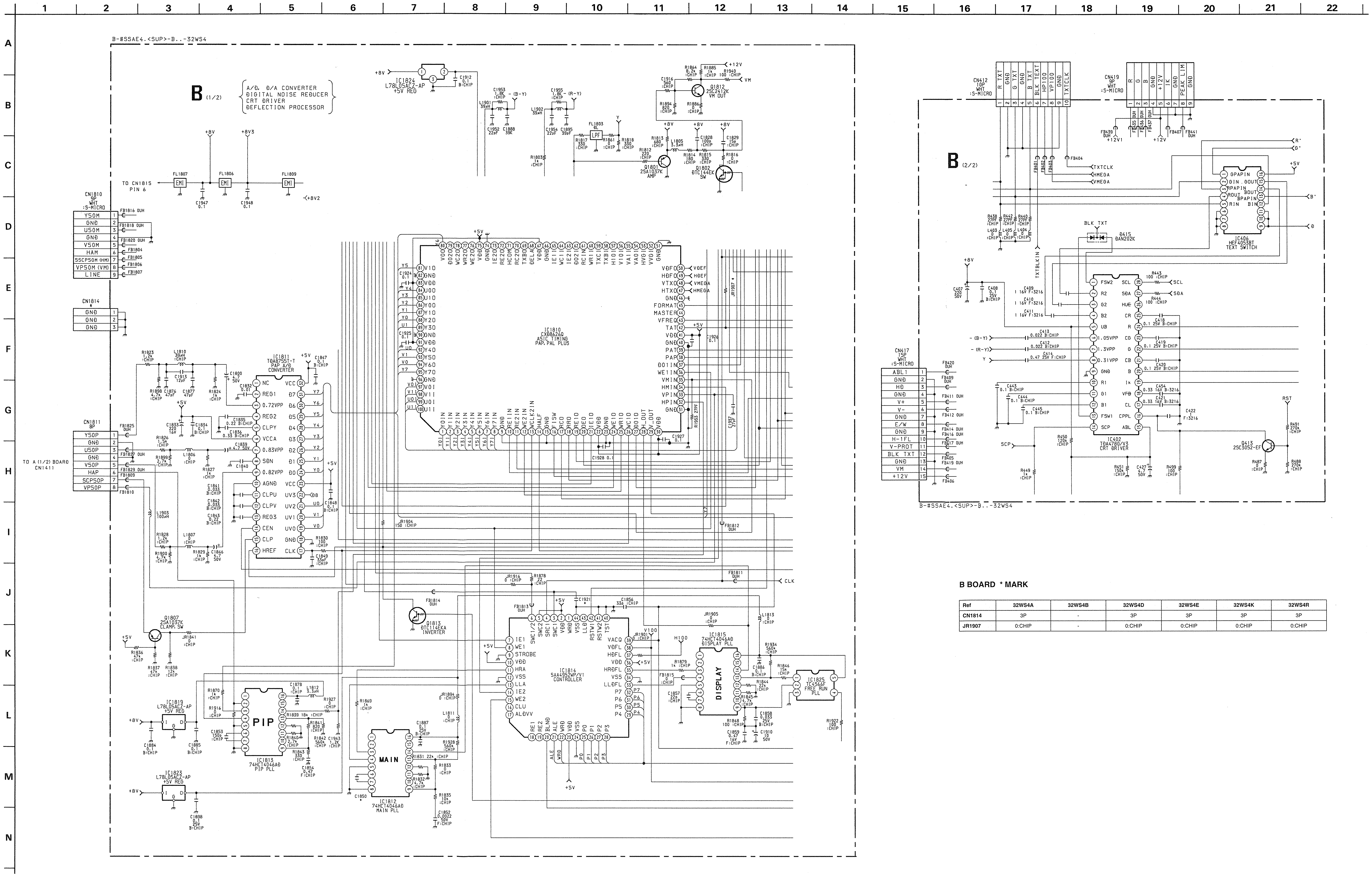
Q

SCANLINE VIDEO PROCESSOR PAL PLUS PROCESSOR
12C BUS INTERFACE, TIMING GENERATOR PAL PLUS ENCODER

Q Board


1-663-210-13 (171279213)
A-1626-
SONY
DIP


B-#SSAE4.<SUP>-Q..-32WS4
TO B (1/2) BOARD CN1813
CN1 40P WHT :BTOB
+5V
GND
RESET
27MHZ
13.5MHZ
HREF
VSOM DELAY
VSOM
SDA
SCL
FL01 EMI
VCC
VCCD
IC9 MC74F157ADR2
IC10 MC74F157ADR2
IC11 MC74F157ADR2
IC12 MC74F157ADR2
IC1 MC74F2400WR2
IC2 CXD8625Q
IC3 CXD8624Q
IC4 TMS4C2972
IC5 MC74F157ADR2
IC6 TMS4C2972
IC8 TL431CZ
Q1 2SD2396H
IC4001 SAA7165WP
Q4001 IMZ1A
CN4001 10P
TO Q1 BOARD CN4101
CN5 3P
+5V
GND
6.7MHZ
HS
VS
U OUT
V OUT
Y OUT
TO IC10 PIN 9
I2C BUS ADDRESS: 1011,111 → BE
RESETZ
HOUT
CREF
HREF
SCL
SDA
VECO
CK13
3.3V
VMEM
FL02 EMI
FL03 EMI
FL04 EMI
Q
SCANLINE VIDEO PROCESSOR
PAL PLUS PROCESSOR
12C BUS INTERFACE. TIMING GENERATOR
PAL PLUS ENCODER


B (1/2)
A/D, D/A CONVERTER
DIGITAL NOISE REDUCER
CRT DRIVER
DEFLECTION PROCESSOR
B-#SSAE4.<SUP>-B..-32WS4
IC1824 L78L05ACZ-AP +5V REG
Q1812 2SC2412K VM OUT
Q1801 2SA1037K AMP
Q1802 DTC144EK SW
CN1810 9P WHT :S-MICRO
TO CN1815 PIN 6
CN1814
CN1811 8P
TO A (1/2) BOARD CN1411
IC1811 TDA8755T-T PAP A/D CONVERTER
IC1810 CXD8626Q ASIC TIMING PAP. PAL PLUS
IC1814 SAA4952WP/V1 CONTROLLER
IC1815 74HCT4046AD DISPLAY PLL
IC1825 TC4S66F FREE RUN PLL
IC1813 74HCT4046AD PIP PLL
IC1812 74HCT4046AD MAIN PLL
IC1819 L78L05ACZ-AP +5V REG
IC1823 L78L05ACZ-AP +5V REG
Q1807 2SA1037K CLAMP. SW
Q1813 DTC114EKA INVERTER
PIP
MAIN
DISPLAY
B (2/2)
CN412 10P WHT :S-MICRO
CN419 9P WHT :S-MICRO
CN417 15P WHT :S-MICRO
IC406 HEF4053BT TEXT SWITCH
IC402 TDA4780/V3 CRT DRIVER
D415 DAN202K
BLK TXT
Q413 2SC3052-EF
B-#SSAE4.<SUP>-B..-32WS4

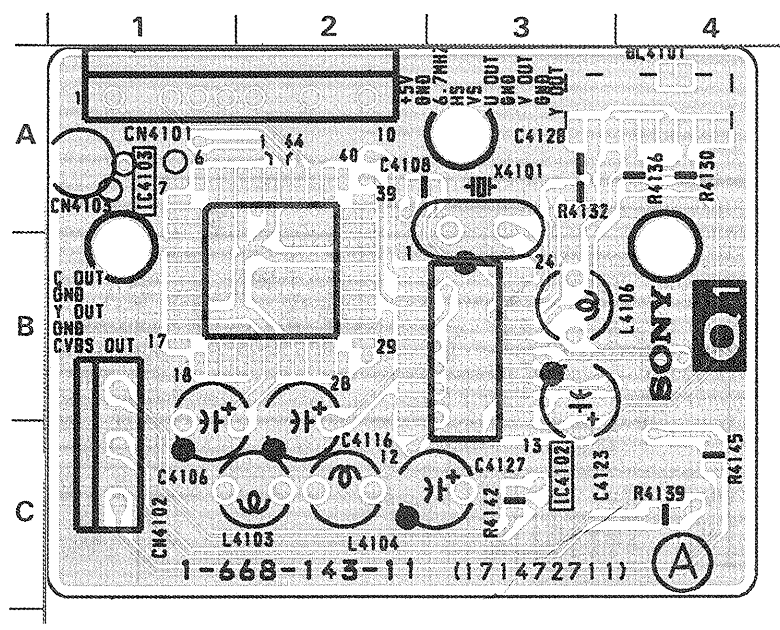
B BOARD * MARK

Ref	32WS4A	32WS4B	32WS4D	32WS4E	32WS4K	32WS4R
CN1814	3P	-	3P	3P	3P	3P
JR1907	0:CHIP	-	0:CHIP	0:CHIP	0:CHIP	0:CHIP

Q1 [PAL PLUS DECODING, DIGITAL ZOOMING]

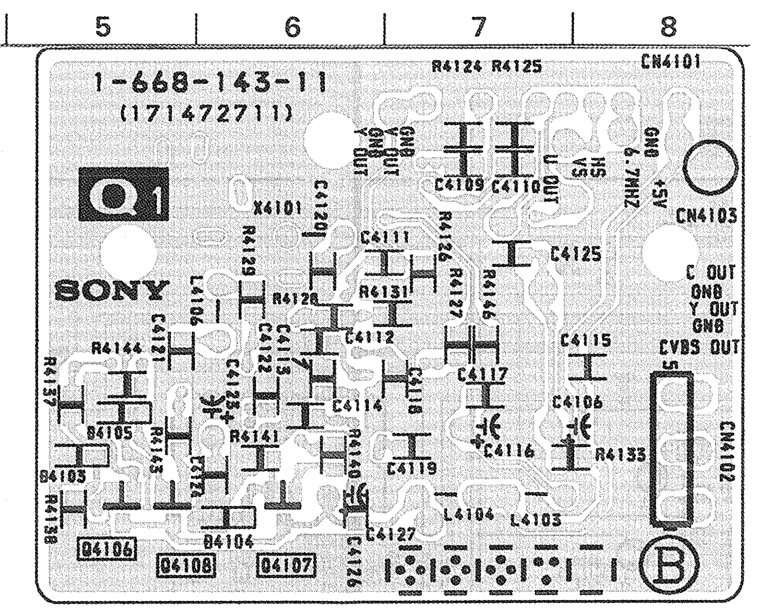
B [A/D, D/A CONVERTER DIGITAL NOISE REDUCER CRT DRIVER DEFLECTION PROCESSOR]

Q1 Board < Component Side >

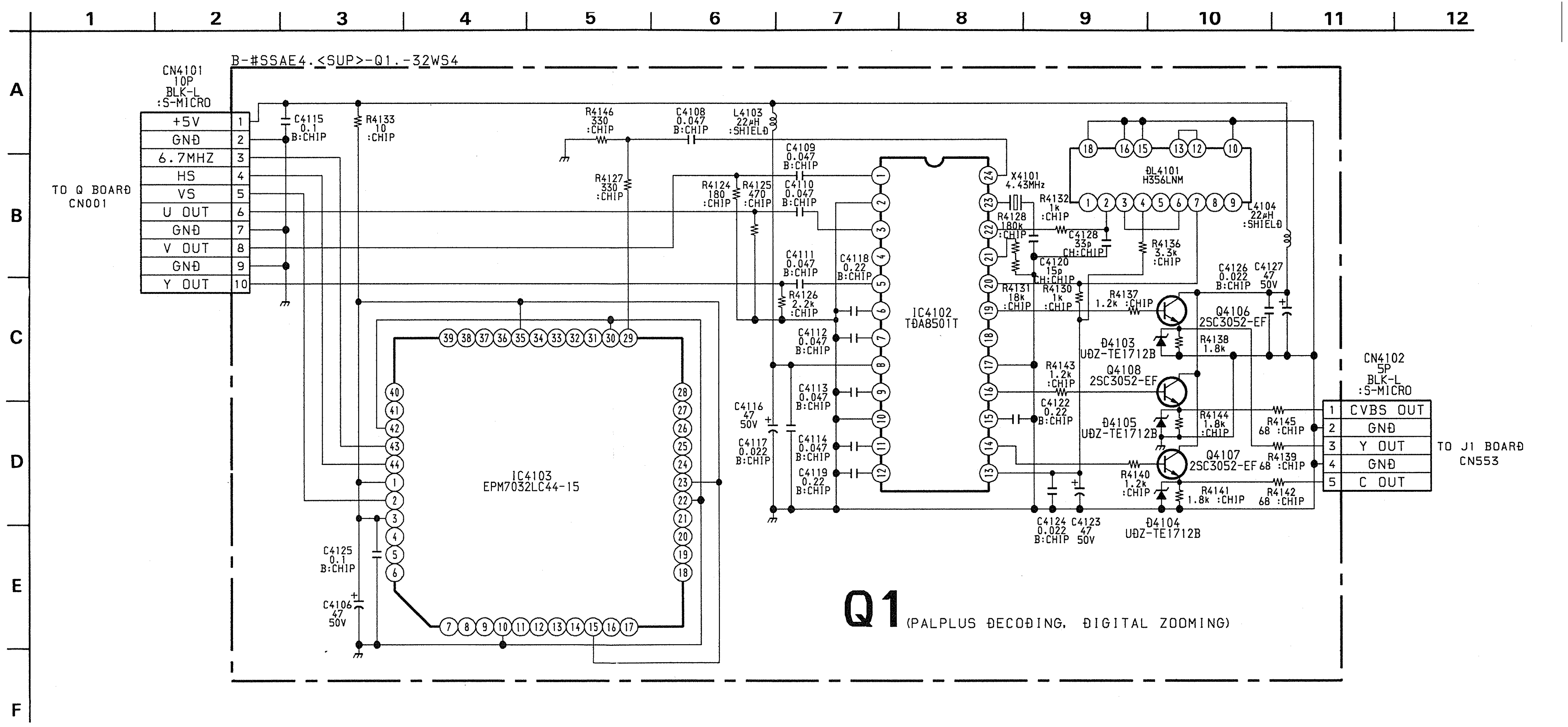


CN4101
CN4103
CN4102
X4101
L4103
L4104
IC4102
SONY
Q1
1-668-143-11
(171472711)
A

Q1 Board < Conductor Side >

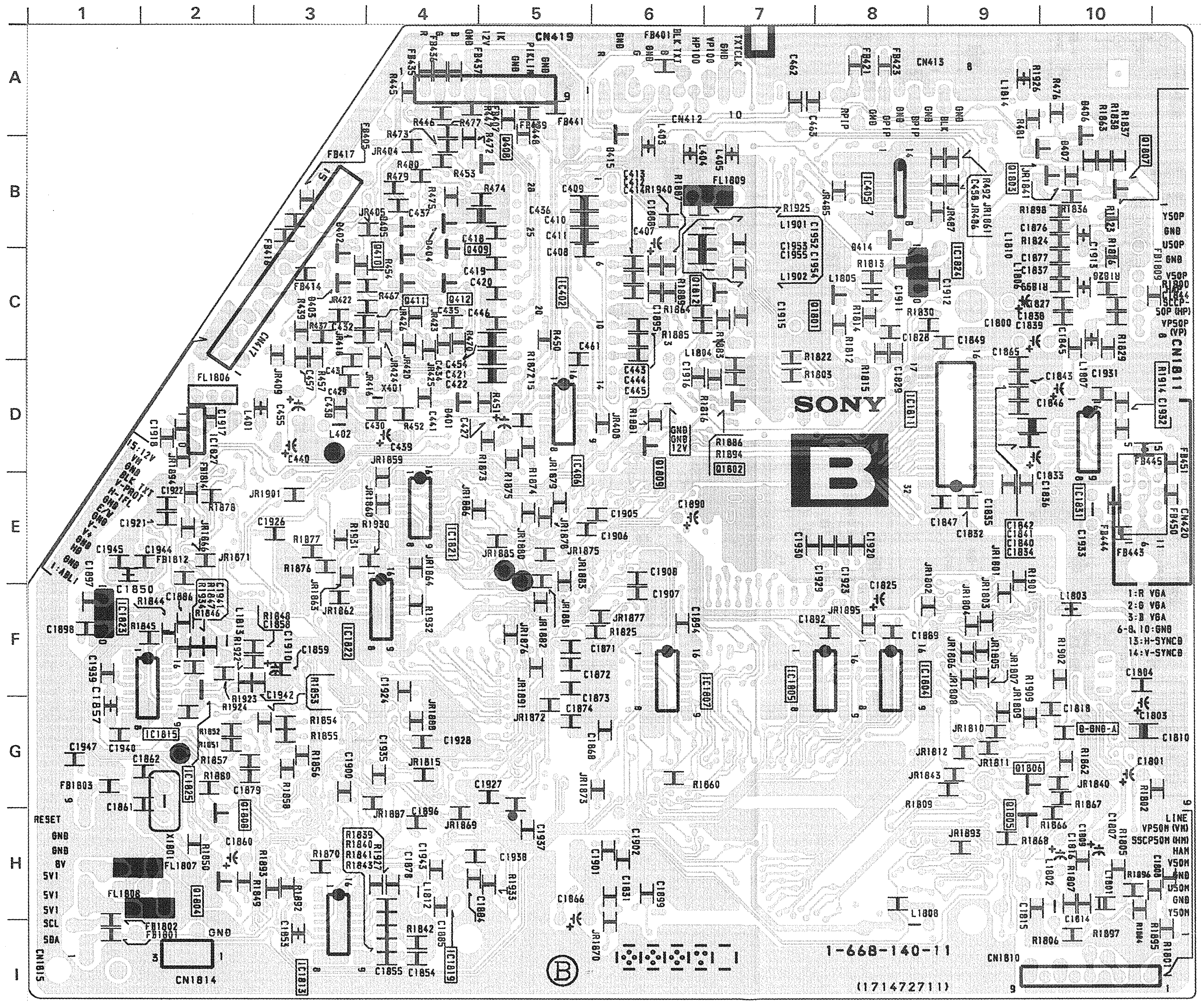


1-668-143-11
(171472711)
Q1
SONY
CN4101
CN4103
CN4102
IC4103
B



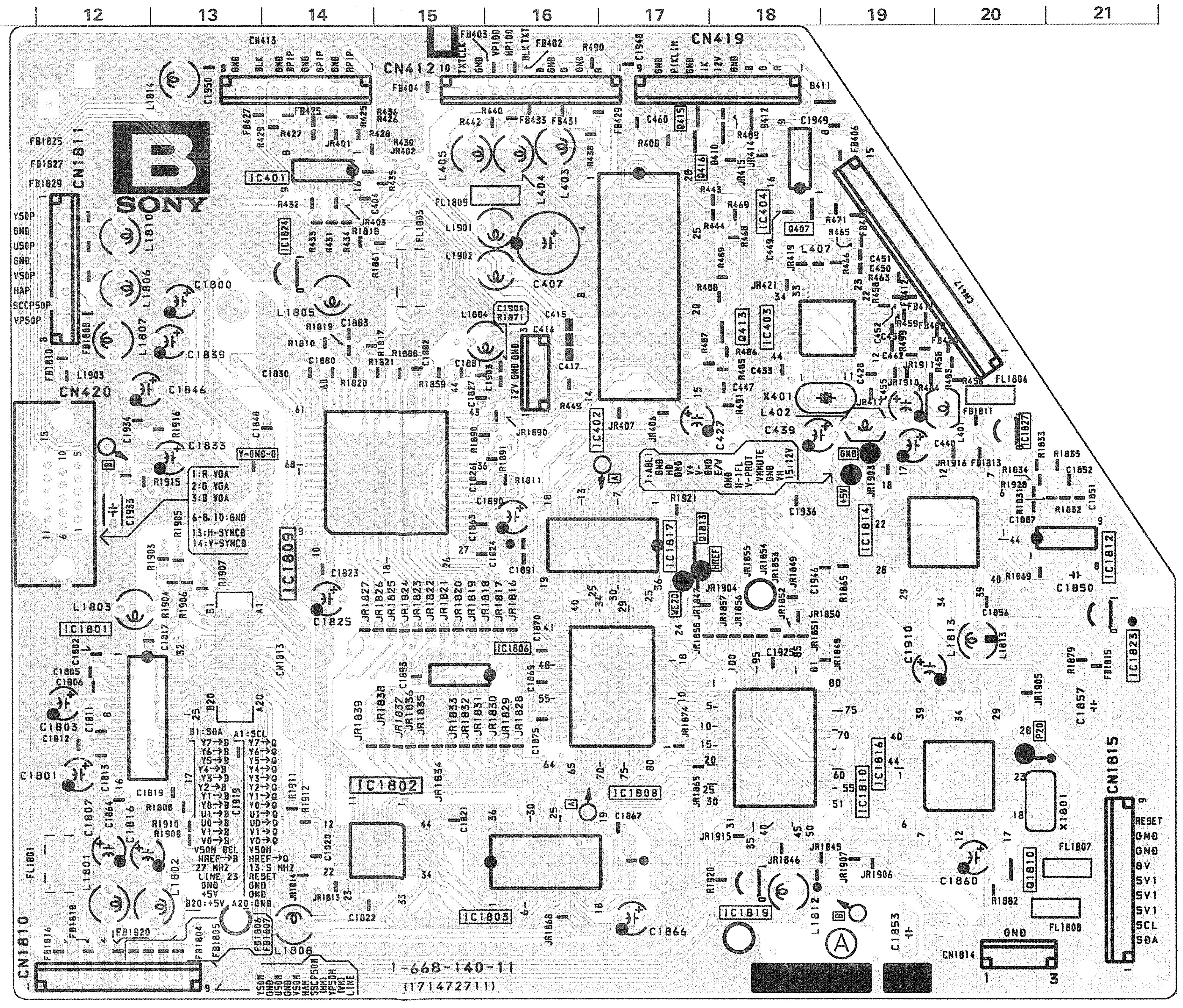
B-#SSAE4.<SUP>-Q1.-32WS4
CN4101 10P BLK-L :S-MICRO
+5V
GND
6.7MHZ
HS
VS
U OUT
GND
V OUT
GND
Y OUT
TO Q BOARD CN001
IC4102 TDA8501T
IC4103 EPM7032LC44-15
X4101 4.43MHz
DL4101 H356LNM
Q4103 UDZ-TE1712B
Q4106 2SC3052-EF
Q4108 2SC3052-EF
Q4105 UDZ-TE1712B
Q4107 2SC3052-EF
Q4104 UDZ-TE1712B
CN4102 5P BLK-L :S-MICRO
CVBS OUT
GND
Y OUT
GND
C OUT
TO J1 BOARD CN553
Q1 (PALPLUS DECODING, DIGITAL ZOOMING)

B Board < Conductor Side >

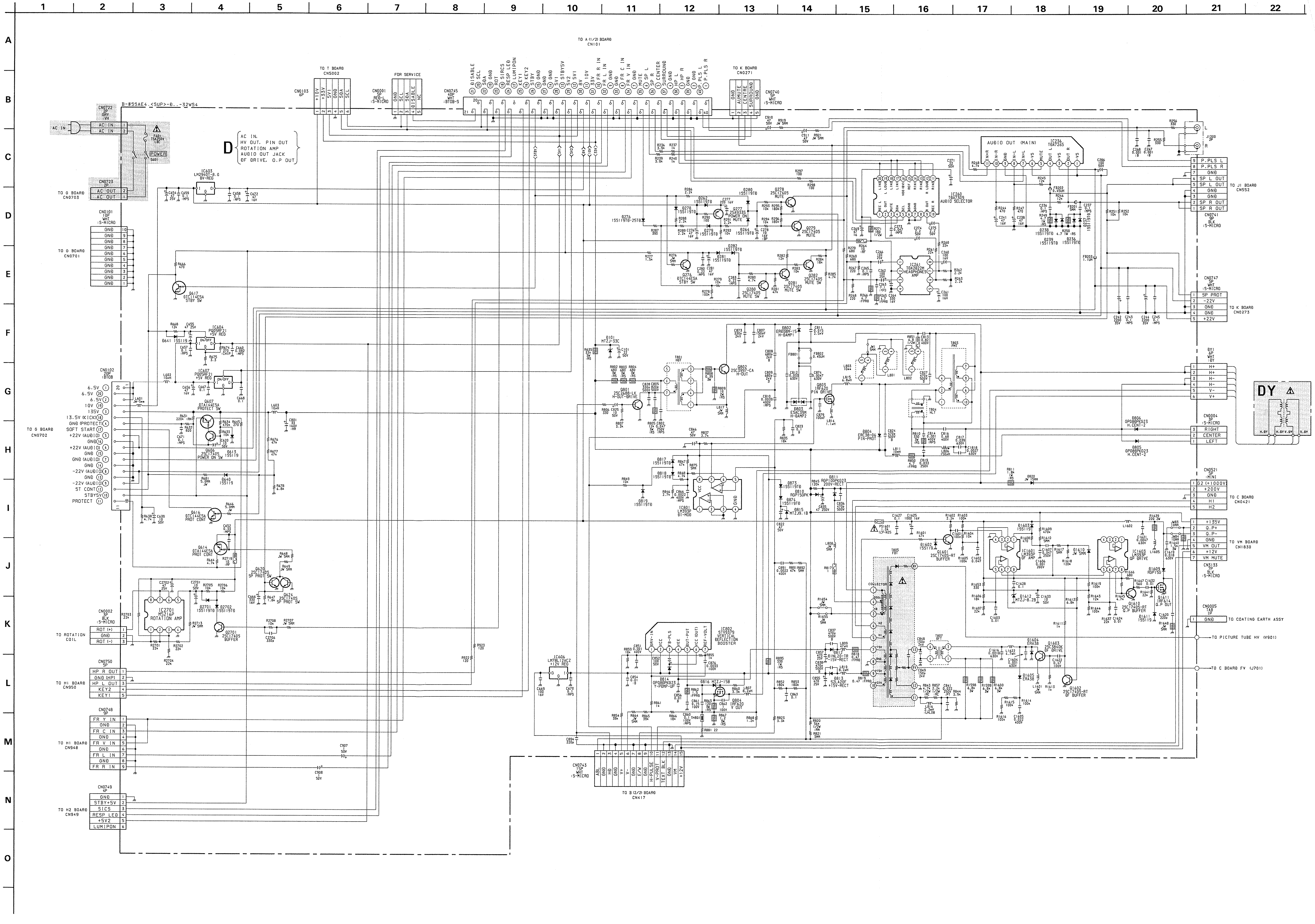


CN419
CN412
CN413
CN1811
CN420
CN1814
CN1810
SONY
B
1-668-140-11
(171472711)

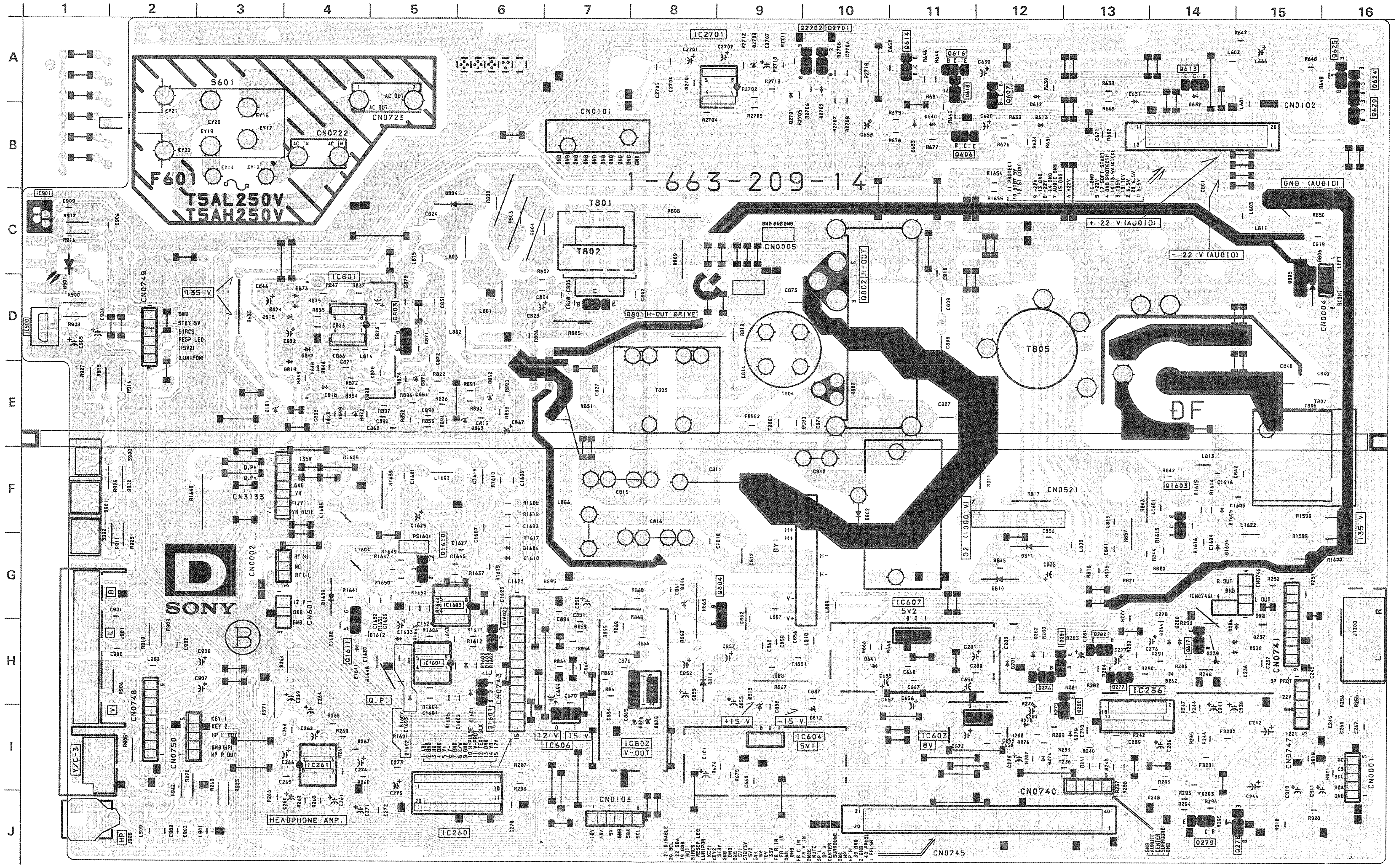
B Board < Component Side >



CN413
CN412
CN419
CN1811
CN420
CN1810
CN1814
CN1815
B
SONY
1-668-140-11
(171472711)

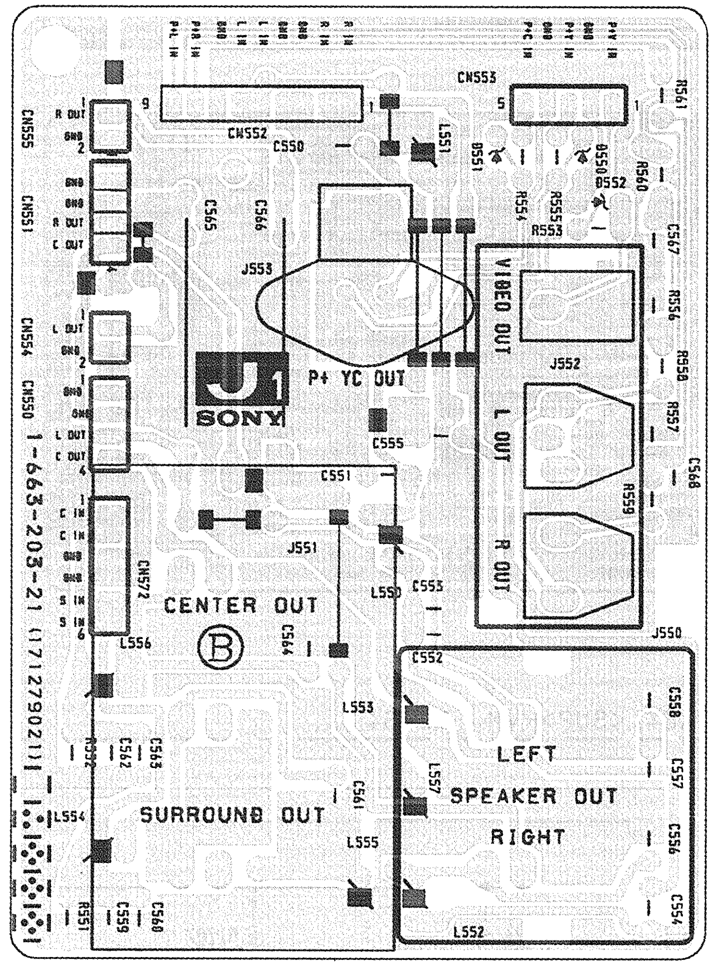
D
AC IN, HV OUT, PIN OUT ROTATION AMP AUDIO OUT JACK OF DRIVE, O.P OUT
TO A (1/2) BOARD CN101
TO T BOARD CN5002
FOR SERVICE
TO K BOARD CN0271
TO G BOARD CN0703
TO G BOARD CN0701
TO G BOARD CN0702
TO ROTATION COIL
TO H1 BOARD CN950
TO H1 BOARD CN948
TO H2 BOARD CN949
TO B (2/2) BOARD CN417
TO J1 BOARD CN552
TO K BOARD CN0273
TO C BOARD CN0421
TO VM BOARD CN1830
TO COATING EARTH ASSY
TO PICTURE TUBE HV (V901)
TO C BOARD FV (J701)
DY
AC IN
POWER
IC603 LM2940T-8.0 8V-REG
IC604 PQ05RF21 +5V REG
IC607 PQ09RF21 +9V REG
IC2701 M5216P ROTATION AMP
IC606 LM78L12ACZ +12V REG
IC802 STV9379 VERTICAL DEFLECTION BOOSTER
IC801 LM393P B+-MOD
IC236 TDA7265 AUDIO OUT (MAIN)
IC260 TDA7429 AUDIO SELECTOR
IC261 TDA2822M HEADPHONES AMP
Q617 DTC114ESA STBY SW
Q607 DTA114ESA PROTECT SW
Q606 2SC1740S POWER ON SW
Q616 DTC144ESA PROT CONT
Q614 DTA144ESA PROT CONT
Q620 2SC1740S SP PROT SW
Q624 2SC1740S SP PROT SW
Q2701 2SC1740S BUFFER
Q801 2SC2688-LK H-OUT-DRIVE
Q802 2SC5597-CA H-OUT
Q803 IRF630 PIN DRIVE
Q804 IRF620 V OUT
Q1601 2SC1740S-RT BUFFER
Q1610 2SC1740S-RT Q.P BUFFER
Q1611 IRF614 Q.P OUT
Q1603 2SC3840K DF DRIVE
Q1602 2SC1740S-RT DF BUFFER
IC1601 LM393P DF AMP
IC1603 LM393P QP DRIVE
Q277 2SA933S POWER ON MUTE
Q278 2SC1740S MUTE
Q279 2SC1740S MUTE
Q276 DTC144ESA STBY SW
Q280 2SC1740S MUTE SW
Q281 2SC1740S MUTE SW
Q282 2SC1740S MUTE SW
T801 HDT
T802 FBT
T803 PMT
T804 HLT
T805 FBT
T807 DFT
J1200 2P

D [AC IN, HV OUT, PIN OUT ROTATION AMP
AUDIO OUT JACK DF DRIVE, O.P OUT]


1-663-209-14
S601
F601
T5AL250V
T5AH250V
CN0722
CN0723
AC IN
AC OUT
CN0101
CN0102
T801
T802
T805
IC801
IC2701
Q801 H-OUT DRIVE
Q802 H-OUT
DF
GND (AUDIO)
+22 V (AUDIO)
-22 V (AUDIO)
135 V
CN0749
CN3133
CN0002
CN601
CN0748
CN0750
CN0741
CN0740
CN0745
CN0103
CN0521
CN0001
CN0004
IC603
IC604
IC606
IC607
IC802 V-OUT
IC236
IC260
IC261
IC1601
IC1603
HEADPHONE AMP.
G2 (1000 V)
+15 V
-15 V
DY1
D SONY
B
Y/C-3
HP
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J

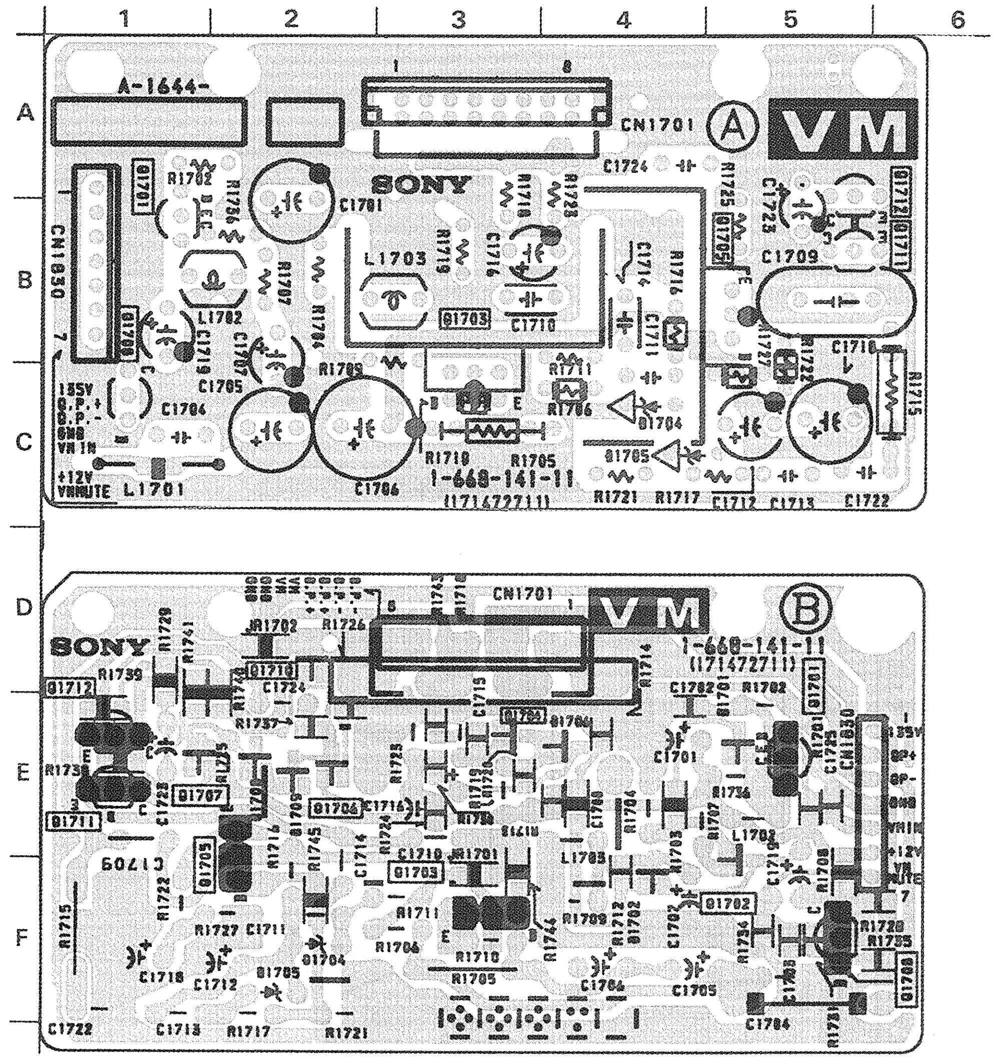
J1 [VIDEO/AUDIO OUT, Y-CHROMA OUT,
SPEAKERS TERMINAL]

J1 Board


J1 SONY
1-663-203-21
P+ YC OUT
VIDEO OUT
L OUT
R OUT
CENTER OUT
B
SURROUND OUT
LEFT
SPEAKER OUT
RIGHT
J550
J551
J552
J553
CN551
CN552
CN553
CN554
CN555
CN556
CN572

VM [VM AMP]

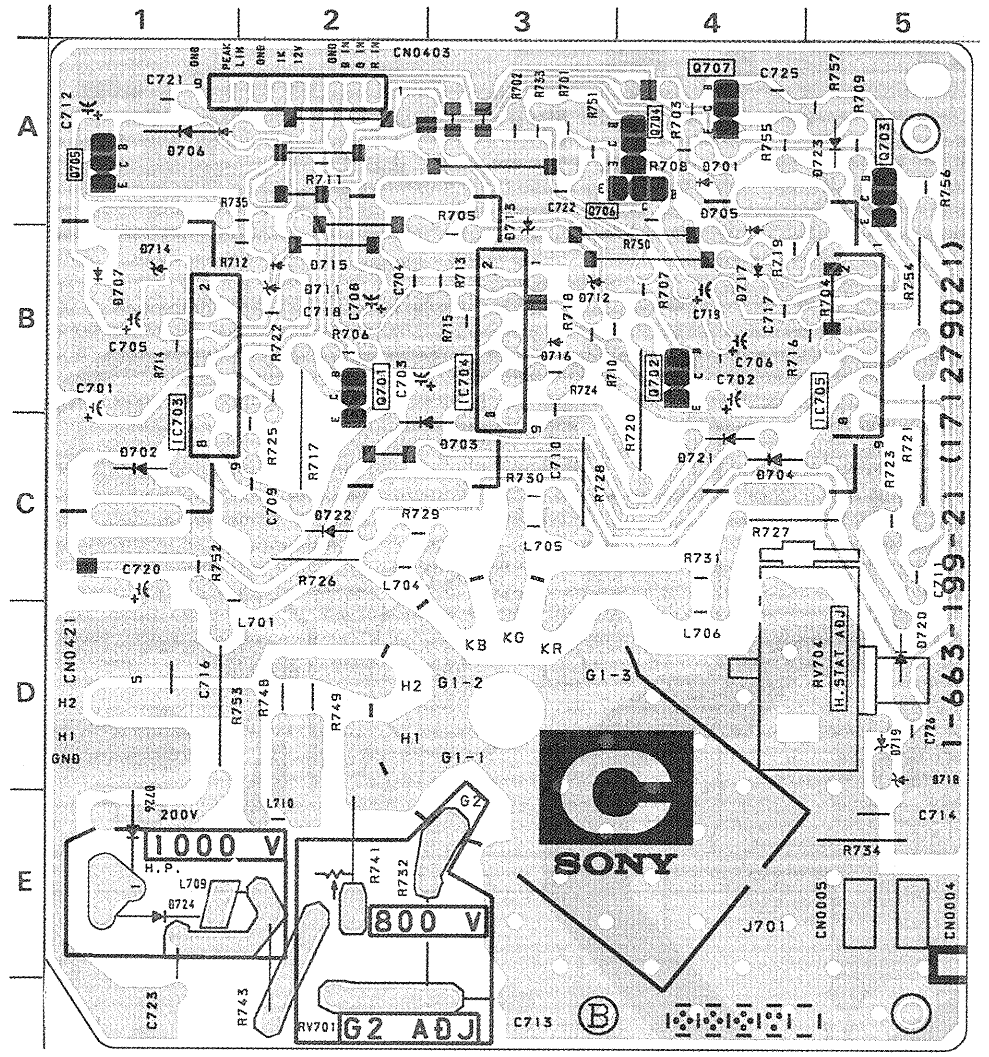
VM Board



A-1644-
CN1701
VM
SONY
CN1830
1-668-141-11
(171472711)

C [R, G, B OUT]

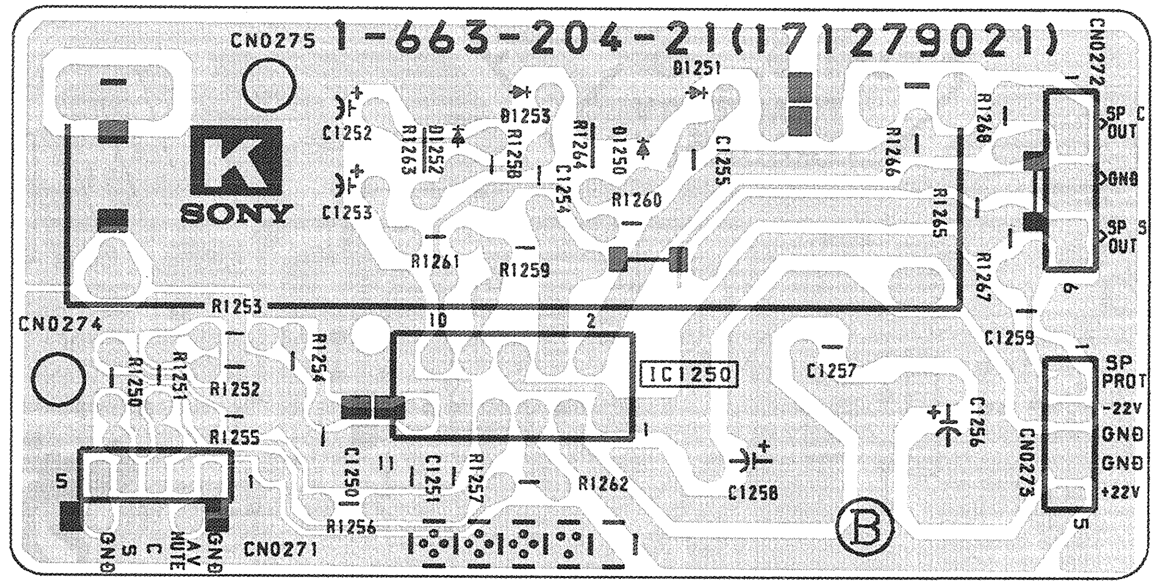
C Board



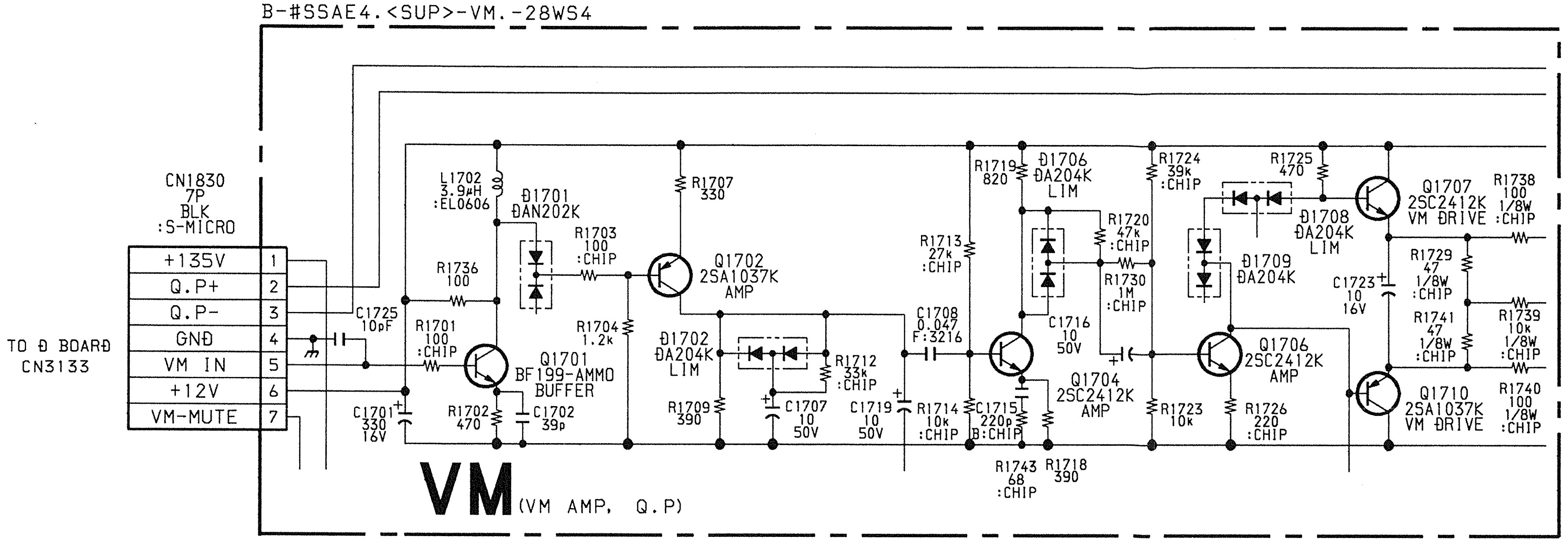
1-663-199-21 (171279021)
CN0403
CN0421
1000 V
800 V
G2 ADJ
H.STAT ADJ
SONY
J701
CN0005
CN0004

K [SURROUND AND CENTRE OUTPUT AMP]

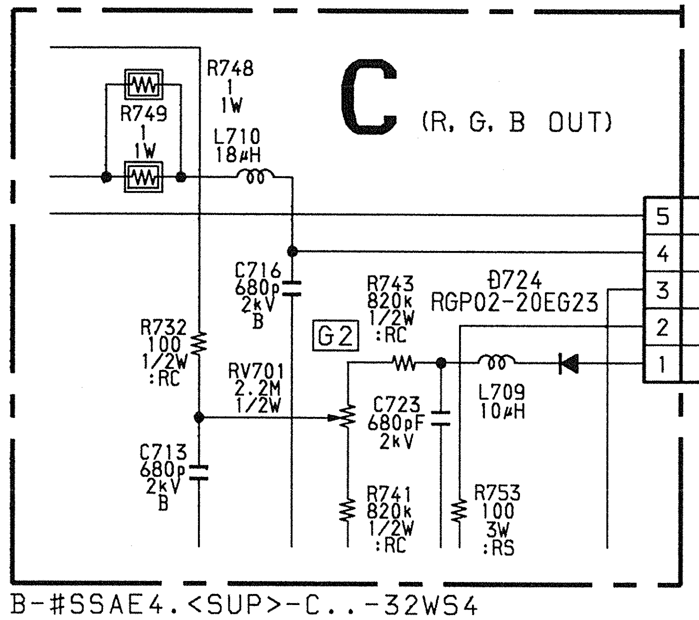
K Board



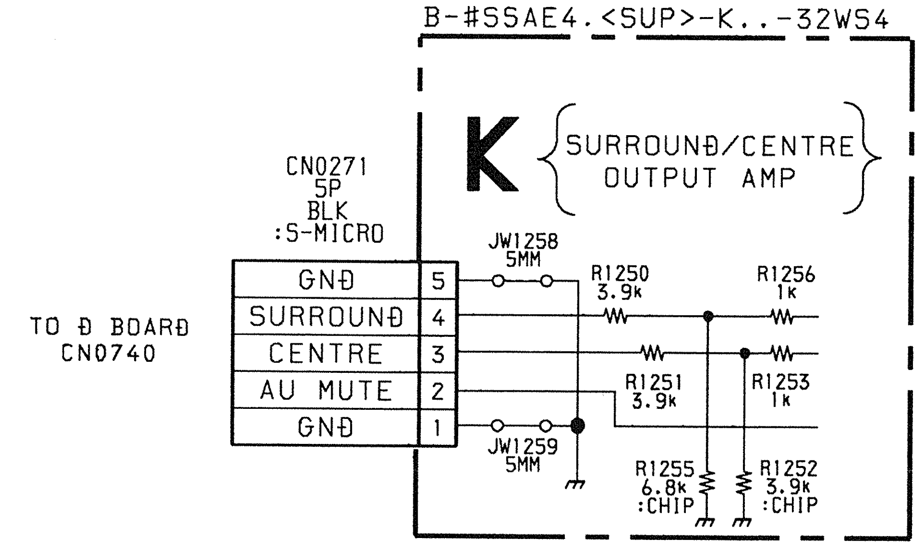
CN0275
1-663-204-21(171279021)
SONY
CN0272
SP C OUT
GND
SP S OUT
CN0274
IC1250
CN0273
SP PROT
-22V
GND
GND
+22V
CN0271



B-#SSAE4.<SUP>-VM.-28WS4
CN1830 7P BLK :S-MICRO
TO Ð BOARÐ CN3133
+135V
Q.P+
Q.P-
GNÐ
VM IN
+12V
VM-MUTE
Q1701 BF199-AMMO BUFFER
Q1702 2SA1037K AMP
Q1704 2SC2412K AMP
Q1706 2SC2412K AMP
Q1707 2SC2412K VM ÐRIVE
Q1710 2SA1037K VM ÐRIVE
Ð1701 ÐAN202K
Ð1702 ÐA204K LIM
Ð1706 ÐA204K LIM
Ð1708 ÐA204K LIM
Ð1709 ÐA204K
L1702 3.9μH :EL0606
VM (VM AMP, Q.P)



C (R, G, B OUT)
CN0421 5P :MINI
H2
H1
GNÐ
+200V
G2 (1000V)
TO Ð BOARÐ CN0521
R748 1 1W
R749 1 1W
L710 18μH
RV701 2.2M 1/2W
Ð724 RGP02-20EG23
L709 10μH
G2
B-#SSAE4.<SUP>-C..-32WS4



B-#SSAE4.<SUP>-K..-32WS4
K {SURROUNÐ/CENTRE OUTPUT AMP}
CN0271 5P BLK :S-MICRO
TO Ð BOARÐ CN0740
GNÐ
SURROUNÐ
CENTRE
AU MUTE
GNÐ
JW1258 5MM
JW1259 5MM
R1250 3.9k
R1251 3.9k
R1253 1k
R1256 1k
R1255 6.8k :CHIP
R1252 3.9k :CHIP

SECTION 6
EXPLODED VIEWS

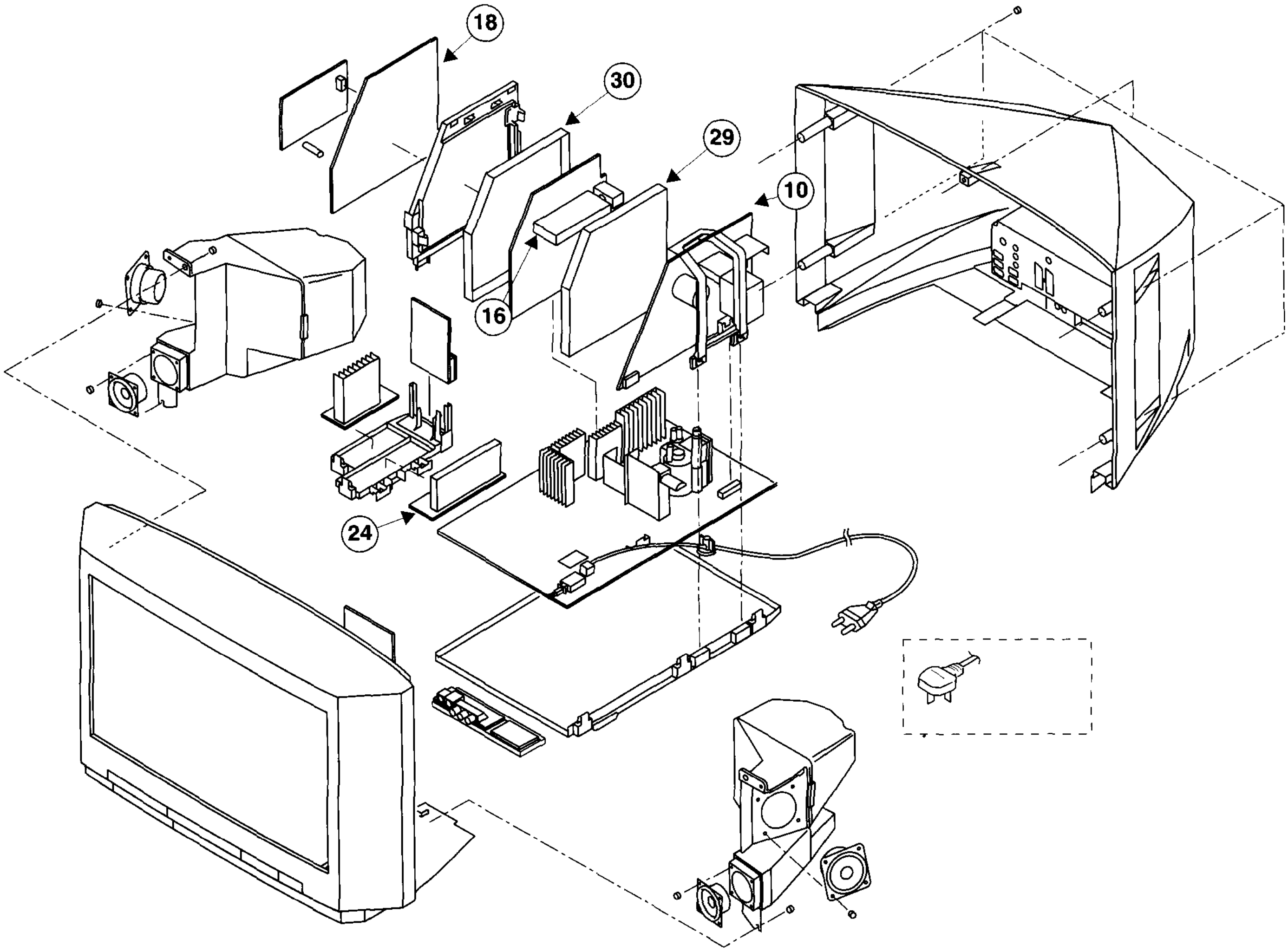
Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

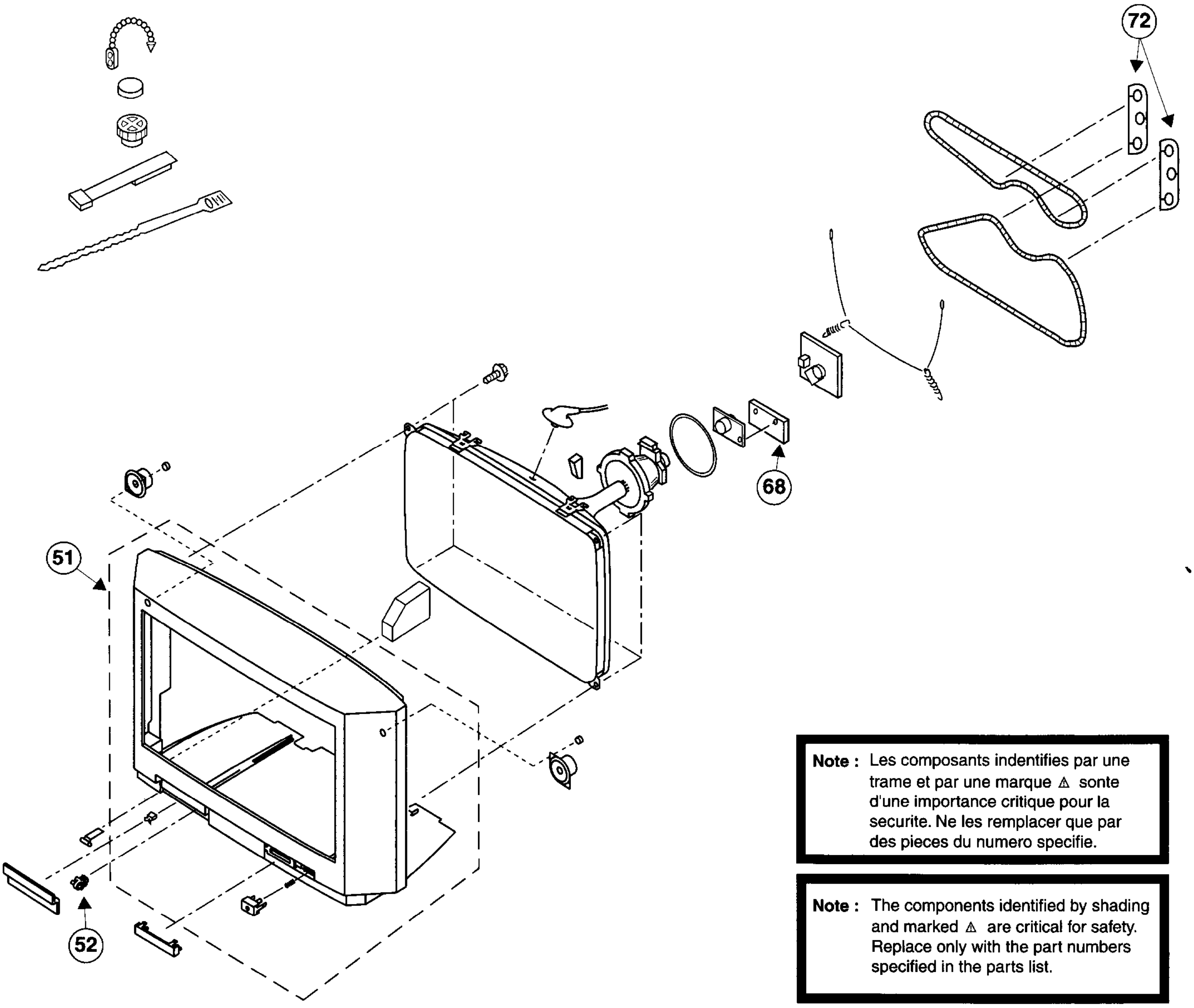
Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

6-1. CHASSIS





Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.